

=> d his

(FILE 'HOME' ENTERED AT 14:46:41 ON 12 AUG 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 14:46:51 ON 12 AUG 2004

L1 1 S WO2000-AU56/AP, PRN OR AU99-8463/AP, PRN
SEL RN

FILE 'REGISTRY' ENTERED AT 14:47:29 ON 12 AUG 2004

L2 16 S E1-E16
L3 1 S L2 AND C23H44N6O7
E C23H44N6O7/MF
L4 8 S E3 AND LYSINE
L5 1 S L4 AND SERYL AND VALYL AND ISOLEUCYL AND ALANYL
L6 1 S L2 AND C16H22N4O6
E C16H22N4O6/MF
L7 1 S E3 AND GLYCINE AND GLUTAM? AND TYROS?
L8 1 S L2 AND 17/SQL
L9 3 S L3, L6, L8
L10 2 S L2 AND (235 OR 231)/SQL
L11 5 S L9, L10
L12 7 S L2 AND NUCLEIC/FS
L13 2 S L12 AND 841/SQL

FILE 'HCAPLUS' ENTERED AT 14:57:44 ON 12 AUG 2004

L14 2 S L11
L15 1 S L13
L16 2 S L14, L15
L17 2 S L1, L16
E CORAL/CT
E E3+ALL
L18 1921 S E4, E5, E6
E CORAL/CT
L19 287 S E8
E ACROPORA/CT
L20 213 S E3-E56
E E3+ALL
L21 209 S E4+NT
E FAVIIDAE/CT
L22 3 S E3
E E3+ALL
E FUNGIIDAE/CT
L23 2 S E3
E E3+ALL
L24 68 S E3
E MERULINIDAE/CT
L25 2 S E3
E MONTIPORA/CT
L26 58 S E3-E19
E E3+ALL
L27 57 S E4+NT
E PLESIASTREA/CT
L28 15 S E3, E4
E E4+ALL
E POCILLOPORA/CT
L29 115 S E3-E12
E E3+ALL
L30 111 S E4+NT
E PORITES/CT
L31 178 S E3-E24
E E3+ALL
L32 177 S E4+NT

		E PORITIDAE/CT
L33	6	S E3
		E SERIATOPORA/CT
L34	18	S E3-E6
		E E6+ALL
		E STYLOPHORA/CT
L35	66	S E3-E6
		E ACANTHASTREA/CT
L36	3	S E3-E5
		E AEQUOREA/CT
L37	299	S E3-E9
		E E3+ALL
L38	299	S E4+NT
		E ANEMONIA/CT
L39	242	S E3-E8
		E ANTHOZOA/CT
L40	77	S E3
		E CASSIOPEA/CT
L41	52	S E3-E9
		E CAULASTREA/CT
L42	1	S E3
		E CLAVULARIA/CT
L43	94	S E3-E11
		E E3+ALL
L44	94	S E4+NT
		E DISCOSOMA/CT
L45	57	S E3-E5
		E MILLEPORA/CT
L46	34	S E3-E15
		E PAVONA/CT
L47	25	S E3-E9
		E PLATYGYRA/CT
L48	17	S E3-E9
		E POCILLOPORA/CT
L49	115	S E3-E12
		E ZOANTHUS/CT
L50	56	S E3-E7
		E ARABIDOPSIS/CT
L51	14013	S E3-E31
		E BOS TAURUS/CT
L52	5724	S E3-E7
		E CAPRA/CT
L53	1302	S E3-E26
		E DIANTHUS/CT
L54	204	S E3-E31
		E EMBRYOPHYTA/CT
		E EQUUS/CT
		E E17+ALL
L55	5980	S CORAL
L56	27411	S L18-L55
L57	1	S L56 AND PPCT
L58	1	S L56 AND ?PPCT?
L59	117	S L56 AND PIGMENT (L) PROTEIN
L60	66	S L56 AND PIGMENT (S) PROTEIN
L61	11	S L56 AND PROTEIN#/CW (L) PIGMENT
L62	3	S L56 AND CHROMATOPHORE
		E CHROMATOPHORE/CT
L63	1	S L56 AND E3-E11
		E E6+ALL
L64	1	S L56 AND E9, E10, E8+NT
L65	1487	S L56 AND FLUORESCEN?
		E FLUORESCEN/CT
		E E99+ALL

L66 3 S L56 AND E9,E8+NT
 L67 211 S L56 AND E7+OLD,NT,PFT,RT
 E E7+ALL
 L68 118 S L56 AND E4,E5,E3+NT
 L69 1719 S L57-L68
 L70 233 S L69 AND ?NUCLEIC?
 L71 485 S L69 AND ?NUCLEO?
 L72 442 S L69 AND DNA
 L73 721 S L69 AND GENETIC?/SC,SX
 E DNA/CT
 E E3+ALL
 L74 305 S L69 AND E5,E6,E3+NT
 L75 323 S L69 AND E167+NT
 L76 1 S L69 AND E168-E170
 L77 77 S L69 AND (E175+OLD,NT,PFT OR E176+OLD,NT,PFT)
 E PROTEIN SEQUENCE/CT
 L78 388 S L69 AND E11+OLD,NT,PFT,RT
 L79 911 S L70-L78
 L80 235 S L79 AND (PD<=19990202 OR PRD<=19990202 OR AD<=19990202)
 L81 8 S L80 AND ?PIGMENT? AND ?FLUORESCEN?
 L82 3 S L80 AND CORAL
 L83 4 S L17,L82
 E DOVE S/AU
 L84 36 S E3,E6,E11-E13
 E HOECH GULDBERG O/AU
 E HOEGH GULDBERG O/AU
 L85 31 S E2-E4
 E HOEGHGULDBERG O/AU
 L86 27 S L84,L85 AND L56
 L87 9 S L86 AND (?PROTEIN? OR ?NUCLEIC? OR ?NUCLEO? OR ?OLIGO? OR ?PE
 L88 5 S L86 AND (GENETIC? OR PROTEIN?)/SC,SX
 L89 9 S L87,L88
 L90 11 S L83,L89
 L91 18 S L86 NOT L90

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FILE 'REGISTRY' ENTERED AT 15:44:52 ON 12 AUG 2004
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 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
 COPYRIGHT (C) 2004 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 11 AUG 2004 HIGHEST RN 725685-10-9
 DICTIONARY FILE UPDATES: 11 AUG 2004 HIGHEST RN 725685-10-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d l11 sqide can tot

L11 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 287414-46-4 REGISTRY

CN Protein (Acropora aspera clone T7SP6BASPOG4 fluorescent pigment 235-amino acids) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 2: PN: WO0046233 SEQID: 4 claimed protein

FS PROTEIN SEQUENCE

SQL 235

PATENT ANNOTATIONS (PNTE):

Sequence	Patent
Source	Reference
=====+	=====
Not Given	WO2000046233
	claimed
	SEQID 4

SEQ 1 SVIAKQMTYK VYMSGTVNGH YFEVEGDGKG KPYEGEQTVR LAVTKGGPLP
51 FAWDILSPQC QYGSIPFTKY PEDIPDYVKQ SFPGRYTWER IMNFEDGAVC
101 TVSNDSSIQG NCFIYHVKFS GLNFPPNGPV MQKKTQGWEP NTERLFARDG
151 MLIGNNFMAL KLEGGGHYLC EFKSTYKAKK PVKMPGYHYV DRKLDVTNHN
201 KDYTSVEQCE ISIARKPVVA CRFFRVKSRH KYAVA

MF Unspecified

CI MAN

SR CA

LC STN Files: CA, CAPLUS

DT.CA CAplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PRP (Properties); USES (Uses)

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:145927

L11 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN

RN 287414-45-3 REGISTRY

CN Protein (Acropora aspera clone T7SP6BASPOG3 fluorescent pigment 231-amino acids) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1: PN: WO0046233 SEQID: 3 claimed protein

FS PROTEIN SEQUENCE

SQL 231

PATENT ANNOTATIONS (PNTE):

Sequence	Patent
Source	Reference
=====+	=====
Not Given	WO2000046233
	claimed
	SEQID 3

SEQ 1 SVIAKQMTYK VYMSGTVNGH YFEVEGDGKG KPYEGEQTVR LAVTKGGPLP
51 FAWDILSPQC QYGSIPFTKY PEDIPDYVKQ SFPGRYTWER IMNFEDGAVC
101 TVSNDSSIQG NCFIYHVKFS GLNFPPNGPV MQKKTQGWEP NTERLFARDG
151 MLIGNNFMAL KLEGGGHYLC EFKSTYKARK PVKMPGYHYV DRKLDVTNHN
201 KDYTSVEQRE ISIARKPLVA CCFFRVKSRH K

RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF Unspecified

CI MAN

SR CA

LC STN Files: CA, CAPLUS

DT.CA CAplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PRP (Properties); USES (Uses)

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:145927

L11 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN

RN 287188-57-2 REGISTRY

CN Glycine, L-glutaminy-L-tyrosyl- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C16 H22 N4 O6

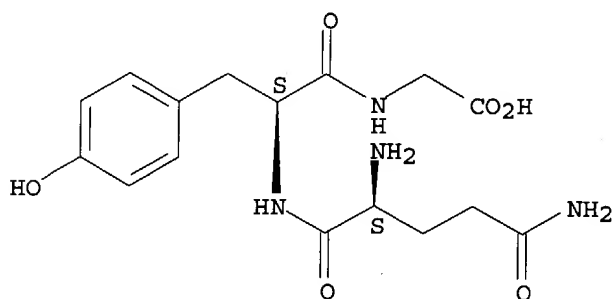
SR CA

LC STN Files: CA, CAPLUS

DT.CA Caplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); PRP (Properties)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:145927

L11 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN

RN 287188-55-0 REGISTRY

CN L-Valine, L-seryl-L-valyl-L-isoleucyl-L-alanyl-L-lysyl-L-glutaminy-L-methionyl-L-threonyl-L-tyrosyl-L-lysyl-L-valyl-L-tyrosyl-L-methionyl-L-seryl-L-threonyl- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 2: PN: WO0046233 SEQID: 2 claimed protein

FS PROTEIN SEQUENCE; STEREOSEARCH

SQL 17

PATENT ANNOTATIONS (PNTE):

Sequence | Patent

Source | Reference

=====+=====

Not Given | WO2000046233

| claimed

| SEQID 2

SEQ 1 SVIAKQMTYK VYMSGTV

MF C85 H140 N20 O25 S2

SR CA

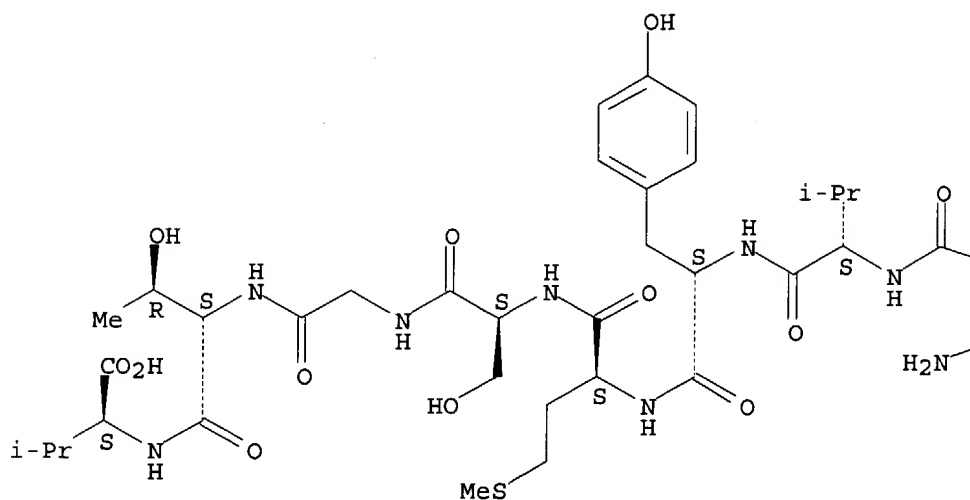
LC STN Files: CA, CAPLUS

DT.CA CAplus document type: Patent

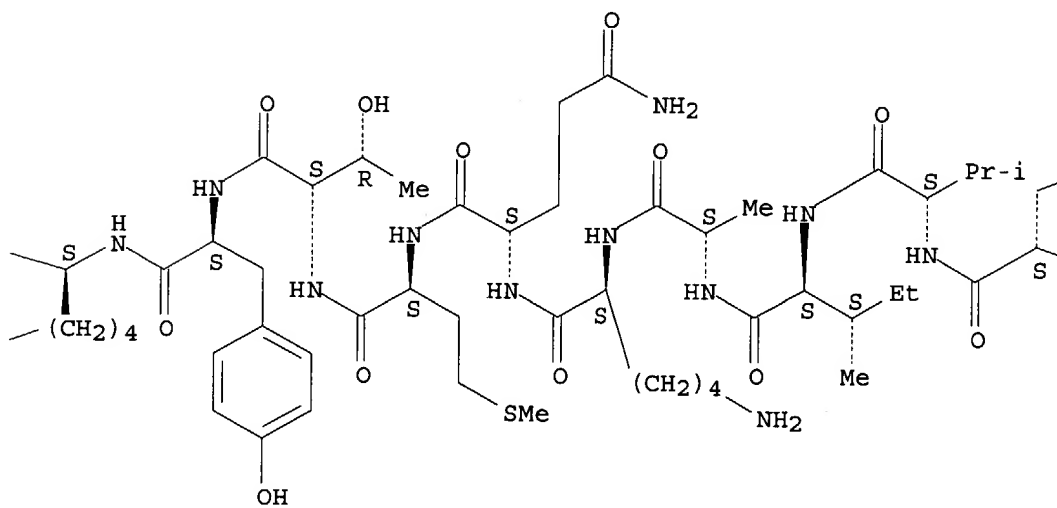
RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



PAGE 1-C

OH

NH₂

1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:145927

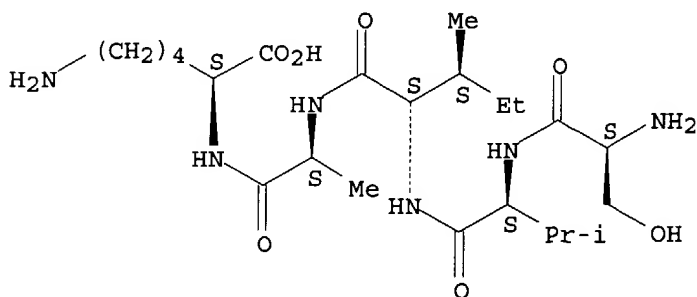
L11 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 287188-54-9 REGISTRY
 CN L-Lysine, L-seryl-L-valyl-L-isoleucyl-L-alanyl- (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN 1: PN: WO0046233 SEQID: 1 claimed protein
 CN 6: PN: WO02070703 SEQID: 5 claimed protein
 FS PROTEIN SEQUENCE; STEREOSEARCH
 SQL 5

PATENT ANNOTATIONS (PNTE):

Sequence	Patent
Source	Reference
Not Given	WO2000046233
	claimed
	SEQID 1

SEQ 1 SVIAK
 MF C23 H44 N6 O7
 SR CA
 LC STN Files: CA, CAPLUS
 DT.CA CAplus document type: Patent
 RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.



2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 137:243709

REFERENCE 2: 133:145927

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L13 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2004 ACS on STN
RN 287414-48-6 REGISTRY
CN DNA (Acropora aspera clone T7SP6BASPOG4 fluorescent pigment
protein-specifying cDNA) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 4: PN: WO0046233 SEQID: 6 claimed DNA
FS NUCLEIC ACID SEQUENCE
SQL 841
NA 275 a 171 c 195 g 200 t

PATENT ANNOTATIONS (PNTE):

Sequence	Patent
Source	Reference
Acropora	WO2000046233
aspera	claimed
	SEQID 6

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SEQ      1 tccggttatcg ctaaacagat gacctacaaa gtttatatgt caggcacggt
      51 caatggacac tactttgagg tcgaaggcga tggaaaagga aagccttacg
     101 agggggagca gacggtaagg ctggctgtca ccaagggcgg acctctgcca
     151 tttgcttggg atatttttatc accacagtgt cagtacggaa gcataccatt
     201 caccaagtac cctgaagaca tccctgacta tgtaaagcag tcattcccgg
     251 ggagatatac atgggagagg atcatgaact ttgaagatgg tgcagtgtgt
     301 actgtcagca atgattccag catccaaggc aactgtttca tctaccatgt
     351 caagttctct ggtttgaact ttctctccaa tggacctgtt atgcagaaga
     401 agacacaggg ctgggaaccc aacactgagc gtctctttgc acgagatgga
     451 atgctgatag gaaacaactt tatggctctg aagttagaag gaggtggtca
     501 ctatttgtgt gaattcaaat ctacttacia ggcaaagaag cctgtgaaga
     551 tgccagggta tcactatgtt gaccgcaaac tggatgtaac caatcacaac
     601 aaggattaca cttccgttga gcagtgtgaa atttccattg cacgcaaacc
     651 tgtggtcgcc tgccgttttt tcagagtcaa atcaaggcac aaatacgag
     701 tggcgtaaaa aacgtagatt ctgatttttag cttatagaag taggaacgaa
     751 gaagtgtaaa caaccattaa tgattaaact tttgaaaaca acgccataaa
     801 aaaaaaaaaa aaaaaaaaaa aaaaagcggc cgctcgaatt a
  
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RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS
DT.CA Caplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PRP
(Properties); USES (Uses)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:145927

L13 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2004 ACS on STN
RN 287414-47-5 REGISTRY
CN DNA (Acropora aspera clone T7SP6BASPOG3 fluorescent pigment

protein-specifying cDNA) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 3: PN: WO0046233 SEQID: 5 claimed DNA

FS NUCLEIC ACID SEQUENCE

SQL 841

NA 274 a 171 c 196 g 199 t 1 s

PATENT ANNOTATIONS (PNTE):

Sequence | Patent

Source | Reference

=====+=====

Acropora | WO2000046233

aspera | claimed

| SEQID 5

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SEQ      1 tccggttatcg ctaaacagat gacctacaaa gtttatatgt caggcacggt
        51 caatggacac tactttgagg tcgaaggcga tggaaaagga aagccttacg
       101 agggggagca gacggttaagg ctggctgtca ccaagggcgg acctctgccca
       151 tttgcttgagg atattttatc accacagtgt cagtacggaa gcataccatt
       201 caccaagtac cctgaagaca tccctgacta tgtaaagcag tcattcccgg
       251 ggagatatac atggggagagg atcatgaact ttgaagatgg tgcagtgtgt
       301 actgtcagca atgattccag catccaaggc aactgtttca tctaccatgt
       351 caagttctct ggtttgaact ttcctcccaa tggacctgtt atgcagaaga
       401 agacacaggg ctgggaaccc aacactgagc gtctctttgc acgagatgga
       451 atgctgatag gaaacaactt tatggctctg aagttagaag gaggtggtca
       501 ctatttgtgt gaattcaaat ctacttaca ggcaagggaag cctgtgaaga
       551 tgccagggtta tcactatgtt gaccgcaaac tggatgtaac caatcacaac
       601 aaggattaca cttccgttga gcagcgtgaa atttccattg caccgaaacc
       651 tttggtcgcc tgctgttttt tcagagtcaa atcaaggcac aaataagcag
       701 tggcgtaaaa aacgtagatt ctgattttag cttagagaag taggaacgaa
       751 gaagtgtaga caaccttcaa tgattaaact tttgaaaaca acscaaaaa
       801 aaaaaaaaaa aaaaaaaaaa aaaaagcggc cgctcgaatt a

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RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF Unspecified

CI MAN

SR CA

LC STN Files: CA, CAPLUS

DT.CA Caplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PRP (Properties); USES (Uses)

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:145927

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 15:45:18 ON 12 AUG 2004

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FILE COVERS 1907 - 12 Aug 2004 VOL 141 ISS 7
FILE LAST UPDATED: 11 Aug 2004 (20040811/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L90 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:11908 HCAPLUS
DN 140:211752
ED Entered STN: 08 Jan 2004
TI Highly organized structure in the non-coding region of the psbA minicircle from clade C Symbiodinium
AU Moore, Robert B.; Ferguson, Katherine M.; Loh, William K. W.;
Hoegh-Guldberg, Ove; Carter, Dee A.
CS School of Molecular and Microbial Biosciences, University of Sydney, NSW, 2006, Australia
SO International Journal of Systematic and Evolutionary Microbiology (2003), 53(6), 1725-1734
CODEN: ISEMF5; ISSN: 1466-5026
PB Society for General Microbiology
DT Journal
LA English
CC 3-3 (Biochemical **Genetics**)
Section cross-reference(s): 6, 10
AB The chloroplast genes of dinoflagellates are distributed among small, circular dsDNA mols. termed minicircles. In this paper, we describe the structure of the non-coding region of the psbA minicircle from Symbiodinium. DNA sequence was obtained from five Symbiodinium strains obtained from four different coral host species (Goniopora tenuidens, Heliofungia actiniformis, Leptastrea purpurea and Pocillopora damicornis), which had previously been determined to be closely related using LSU rDNA region D1/D2 sequence anal. Eight distinct sequence blocks, consisting of four conserved cores interspersed with two metastable regions and flanked by two variable regions, occurred at similar positions in all strains. Inverted repeats (IRs) occurred in tandem or 'twin' formation within two of the four cores. The metastable regions also consisted of twin IRs and had modular behavior, being either fully present or completely absent in the different strains. These twin IRs are similar in sequence to double-hairpin elements (DHEs) found in the mitochondrial genomes of some fungi, and may be mobile elements or may serve a functional role in recombination or replication. Within the central unit (consisting of the cores plus the metastable regions), all IRs contained perfect sequence inverses, implying they are highly evolved. IRs were also present outside the central unit but these were imperfect and possessed by individual strains only. A central adenine-rich sequence most closely resembled one in the center of the non-coding part of Amphidinium operculatum minicircles, and is a potential origin of replication. Sequence polymorphism was extremely high in the variable regions, suggesting that these regions may be useful for distinguishing strains that cannot be differentiated using mol. markers currently available for Symbiodinium.
ST Symbiodinium chloroplast gene psbA minicircle noncoding sequence
IT DNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(circular, minicircle; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
IT Chloroplast
(highly organized structure in non-coding region of psbA minicircle

- from clade C Symbiodinium)
- IT Chloroplast DNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Genetic polymorphism
(in non-coding region; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Repetitive DNA
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(inverted, tandem or twin, within conserved cores of non-coding region; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Symbiodinium
(isolated from different coral host species; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Genetic element
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(non-coding region, of psbA minicircle; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT **Protein** sequences
(of photosystem II (psbA gene); highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT DNA sequences
(of psbA gene; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Gene, microbial
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(psbA; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Genetic element
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(purine-rich box, adenine rich, potential origin of replication; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT Photosystem II
(subunit D1; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT 615200-11-8 615200-13-0 665483-76-1 665483-77-2 665483-78-3
665483-79-4 665483-80-7 665483-81-8 665483-82-9 665483-83-0
665483-84-1
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)
- IT 615200-10-7 615200-12-9 615200-14-1 615200-15-2 615200-16-3
615200-17-4
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**nucleotide** sequence; highly organized structure in non-coding region of psbA minicircle from clade C Symbiodinium)

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Baillie, B; J Phycol 2000, V36, P1153 HCAPLUS
- (2) Baker, A; Annu Rev Ecol Evol Syst Review in Advance, 10.1146/annurev.ecolsys.34.011802.132417 2003
- (3) Barbrook, A; Mol Gen Genet 2000, V263, P152 HCAPLUS
- (4) Barbrook, A; Mol Genet Genomics 2001, V266, P632 HCAPLUS
- (5) Brown, B; Coral Reefs 1997, V16(suppl), PS129

- (6) Carlos, A; J Phycol 1999, V35, P1054 HCAPLUS
- (7) Carter, D; Australian Society for Microbiology: Annual Scientific Meeting 2000
- (8) Dai, X; Proc Natl Acad Sci U S A 1997, V94, P2174 HCAPLUS
- (9) Downs, C; Free Radic Biol Med 2002, V33, P533 HCAPLUS
- (10) Farah, J; Genetics 2002, V161, P461 HCAPLUS
- (11) Fensome, R; Micropaleontology Special Publication 1993, 7
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L90 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:192150 HCAPLUS

DN 139:113248

ED Entered STN: 11 Mar 2003

- TI The 2.2 Å Crystal Structure of a Pocilloporin Pigment Reveals a Nonplanar Chromophore Conformation
- AU Prescott, Mark; Ling, Michael; Beddoe, Travis; Oakley, Aaron J.; Dove, Sophie; Hoegh-Guldberg, Ove; Devenish, Rodney J.; Rossjohn, Jamie
- CS School of Biomedical Sciences, The Protein Crystallography Unit, Monash University, Clayton, 3800, Australia
- SO Structure (Cambridge, MA, United States) (2003), 11(3), 275-284
CODEN: STRUE6; ISSN: 0969-2126
- PB Cell Press
- DT Journal
- LA English
- CC 6-3 (General Biochemistry)
Section cross-reference(s): 12, 75
- AB Reef-building **corals** contain host pigments, termed pocilloporins, that function to regulate the light environment of their resident microalgae by acting as a photoprotectant in excessive sunlight. We have determined the crystal structure of an intensely blue, nonfluorescent pocilloporin to 2.2 Å resolution and a genetically engineered fluorescent variant to 2.4 Å resolution. The pocilloporin chromophore structure adopts a markedly different conformation in comparison with the DsRed chromophore, despite the chromophore sequences (Gln-Tyr-Gly) being identical; the tyrosine ring of the pocilloporin chromophore is noncoplanar and in the trans configuration. Furthermore, the fluorescent variant adopted a noncoplanar chromophore conformation. The data presented here demonstrates that the conformation of the chromophore is highly dependent on its immediate environment.
- ST crystal structure **protein** sequence pocilloporin Rtms5
Rtms5His146Ser chromophore Montipora
- IT Fluorescence
Hydrogen bond
Montipora effoescens
(atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT **Protein** engineering
(of pocilloporin Rtms5His146Ser; atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT Crystal structure
(of pocilloporins Rtms5 and Rtms5His146Ser)
- IT Conformation
(of pocilloporins; atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT **Proteins**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(pocilloporin Rtms5; atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT **Proteins**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(pocilloporin Rtms5His146Ser; atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT Chromophores
(structure of; atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT Bond
(van der Waals; atomic resolution crystallog. structure of a pocilloporin pigment reveals a nonplanar chromophore conformation)
- IT 562110-28-5
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequences; atomic resolution crystallog. structure of a

pocilloporin pigment reveals a nonplanar chromophore conformation)

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L90 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:132210 HCAPLUS

DN 139:2560

ED Entered STN: 21 Feb 2003

TI The production, purification and crystallization of a pocilloporin pigment from a reef-forming **coral**

AU Beddoe, Travis; Ling, Michael; **Dove, Sophie;**
Hoegh-Guldberg, Ove; Devenish, Rodney J.; Prescott, Mark;
Rossjohn, Jamie

CS Dep. Biochem. Mol. Biol., Sch. Biomed. Sci., Monash University, Clayton,
3800, Australia

SO Acta Crystallographica, Section D: Biological Crystallography (2003),
D59(3), 597-599

CODEN: ABCRE6; ISSN: 0907-4449

PB Blackwell Munksgaard

DT Journal

LA English

CC 6-3 (General Biochemistry)

Section cross-reference(s): 75

AB Reef-building **corals** contain fluorescent pigments termed pocilloporins that function by regulating the light environment of **coral** and acting as a photoprotectant in excessive sunlight. These pocilloporins are related to the monomeric green fluorescent **protein** and the tetrameric DsRed fluorescent **proteins**, which have widespread use as biotechnol. tools. An intensely blue-colored pocilloporin, termed Rtms5, was expressed in Escherichia coli, purified and crystallized. Rtms5 was shown to be tetrameric, with deep blue crystals that diffract to 2.2 Å resolution and belong to space group I4122. The color of this pocilloporin was observed to be sensitive to pH and a yellow (pH 3.5) and a red form (pH 4.5) of Rtms5 were also crystallized. These crystals belong to space group P4222 and diffract to 2.4 Å resolution or better.

ST crystn **coral** pocilloporin crystal structure quaternary structure
 IT Crystallization
 (crystallization and crystal structure of pH-dependent deep blue, yellow and red forms of reef-forming **coral** pocilloporin)
 IT **Coral**
 (crystallization of deep blue, yellow and red forms of **reef-forming coral** pocilloporins)
 IT Crystal structure
 (of deep blue, yellow and red forms of fluorescent pigment pocilloporin)
 IT **Proteins**
 RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
 (pocilloporin; crystallization and crystal structure of pH-dependent deep blue, yellow and red forms of reef-forming **coral** pocilloporins)
 IT Quaternary structure
 (**protein**; pocilloporin shows tetrameric structure)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
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- (9) Miyawaki, A; Proc Natl Acad Sci USA 1999, V96, P2135 HCAPLUS
- (10) Ntziachristos, V; Nature Med 2002, V8, P757 HCAPLUS
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- (15) Wall, M; Nature Struct Biol 2000, V7, P1133 HCAPLUS
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L90 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:696129 HCAPLUS

DN 137:243709

ED Entered STN: 13 Sep 2002

TI **Chromoproteins** and their gene sequences from Australian **corals** and their use in genetic transformation of plant flower color and other applications

IN Jones, Elizabeth Louise; Karan, Mirko; Brugliera, Filippa; Mason, John; Dove, Sophie Gwendoline; Hoegh-guldberg, Ian Ove; Prescott, Mark

PA Nufarm Limited, Australia; The University of Queensland; Florigene Ltd.

SO PCT Int. Appl., 510 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N015-12

ICS C07K014-435; C12N005-10; A01H005-00; C07K016-18; C12Q001-68

CC 6-3 (General Biochemistry)

Section cross-reference(s): 3, 9, 11, 12, 17

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002070703	A2	20020912	WO 2002-GB928	20020301
	WO 2002070703	A3	20030904		
	WO 2002070703	C1	20031120		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1390499 A2 20040225 EP 2002-703726 20020301

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI US 2001-273227P P 20010302

AU 2001-3874 A 20010321

US 2001-329816P P 20011015

WO 2002-GB928 W 20020301

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002070703	ICM	C12N015-12
	ICS	C07K014-435; C12N005-10; A01H005-00; C07K016-18; C12Q001-68

AB The present invention relates generally to **peptides**, **polypeptides** or **proteins** having one or more amino acids or one or more amino acid sequences which exhibit color-facilitating properties, either on their own or following interaction with one or more other amino acids and to **nucleic acid** mols. encoding same. Such **peptides**, **polypeptides** and **proteins** are referred to herein as "color-facilitating mols." or "CFMs", and were isolated from Heron Island and Melbourne **coral** species. The present invention further provides genetic constructs for use in genetically modifying eukaryotic or prokaryotic cells and more particularly eukaryotic tissue so as to alter their visual characteristics or capacity for exhibiting same to a human eye in the absence of excitation by an extraneous non-white light or particle emission. The present invention, therefore, extends to eukaryotic or prokaryotic cells and more particularly eukaryotic tissue, which are genetically modified to produce CFMs and which thereby exhibit altered visual characteristics in the absence of excitation by an extraneous non-white light or particle emission. In one particular embodiment, the CFMs are used to alter the visual characteristics of plants and even more particularly flower color. In another embodiment, the present invention provides gels or coatings or similar biomaterials in the form of a biomatrix comprising the CFMs such as for use as a UV sink, in a sun screen, in cosmetics, as an expression marker or other reporter mol. or for use as a photon trap to increase light intensity.

ST **coral chromoprotein** gene sequence coloring material;
plant transformation flower color **chromoprotein coral**;
biomatrix color **chromoprotein coral**

IT Plant tissue
(callus, transgenic; **chromoproteins** and their gene sequences from Australian **corals** and their use in genetic transformation of plant flower color and other applications)

IT **Acanthastrea**
Acropora
Acropora aspera
Acropora nobilis
Aequorea
Aequorea victoria
Anemonia majano
Anemonia sulcata
Anthozoa

Cassiopea
 Cassiopea xamachana
 Caulastrea
 Clavularia
 Coral
 DNA sequences
 Discosoma
 Discosoma striata
 Millepora
 Montipora
 Montipora efflorescens

Optical traps
 Pavona decussata
 Platygyra
 Pocillopora
 Pocillopora damicornis
 Porites murrayensis
 Protein sequences
 Zoanthus

(chromoproteins and their gene sequences from Australian corals and their use in genetic transformation of plant flower color and other applications)

IT Gene, animal

RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)

(chromoproteins and their gene sequences from Australian corals and their use in genetic transformation of plant flower color and other applications)

IT Antibodies and Immunoglobulins

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(chromoproteins and their gene sequences from Australian corals and their use in genetic transformation of plant flower color and other applications)

IT Proteins

RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); COS (Cosmetic use); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)

(chromoproteins; chromoproteins and their gene sequences from Australian corals and their use in genetic engineering of plant flower color and other applications)

IT Leather

Wool

(color of; chromoproteins and their gene sequences from Australian corals and their use in genetic engineering of plant flower color and other applications)

IT Beverages

Coloring materials

Cosmetics

Cotton fibers

Flavoring materials

Food additives

Fruit and vegetable juices

Sunscreens

(color-facilitating protein additives; chromoproteins and their gene sequences from Australian corals and their use in genetic transformation of plant flower color and other applications)

IT Embryophyta

(fiber plant, transgenic; chromoproteins and their gene sequences from Australian corals and their use in genetic transformation of plant flower color and other applications)

IT Cannabis sativa

- (fiber, color-facilitating **protein** additives;
chromoproteins and their gene sequences from Australian
corals and their use in genetic transformation of plant flower
color and other applications)
- IT Genetic engineering
(for color-facilitating **protein** production;
chromoproteins and their gene sequences from Australian
corals and their use in genetic transformation of plant flower
color and other applications)
- IT Transit **peptides**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(for targeting for expression in plastid; **chromoproteins** and
their gene sequences from Australian **corals** and their use in
genetic transformation of plant flower color and other applications)
- IT **Proteins**
RL: BSU (Biological study, unclassified); BUU (Biological use,
unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL
(Biological study); USES (Uses)
(green fluorescent, derivs. or homologs; **chromoproteins** and
their gene sequences from Australian **corals** and their use in
genetic transformation of plant flower color and other applications)
- IT Animal cell
(mammalian, transgenic; **chromoproteins** and their gene
sequences from Australian **corals** and their use in genetic
transformation of plant flower color and other applications)
- IT Diagnosis
(mol., color-facilitating **proteins** or use in;
chromoproteins and their gene sequences from Australian
corals and their use in genetic transformation of plant flower
color and other applications)
- IT Embryophyta
(ornamental plant, transgenic; **chromoproteins** and their gene
sequences from Australian **corals** and their use in genetic
transformation of plant flower color and other applications)
- IT Endoplasmic reticulum
Plastid
(targeting for expression in; **chromoproteins** and their gene
sequences from Australian **corals** and their use in genetic
transformation of plant flower color and other applications)
- IT Animal cell
Arabidopsis thaliana
Bos taurus
Capra
Chrysanthemum
Dianthus
Embryophyta
Equus caballus
Eukaryota
Flower
Fruit
Gerbera
Lama glama
Leaf
Lilium
Lisianthus
Livestock
Magnoliophyta
Petunia
Petunia hybrida
Plant cell
Prokaryote
Root

Rose (Rosa)
 Rose (Rosa hybrida)
 Seed
 Sheep
 Stem
 Sus scrofa domestica
 Tulip
 Viola tricolor

(transgenic; **chromoproteins** and their gene sequences from
 Australian **corals** and their use in genetic transformation of
 plant flower color and other applications)

IT 287188-54-9 453557-03-4 453557-04-5 453557-05-6
 453557-06-7 453557-07-8 453557-08-9 453557-09-0 453557-10-3
 453557-11-4 453557-12-5 453557-13-6 453557-14-7 459878-43-4
 RL: BSU (Biological study, unclassified); BUU (Biological use,
 unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL
 (Biological study); USES (Uses)

(N-terminal **peptide**; **chromoproteins** and their gene
 sequences from Australian **corals** and their use in genetic
 transformation of plant flower color and other applications)

IT 459878-78-5
 RL: BSU (Biological study, unclassified); BUU (Biological use,
 unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL
 (Biological study); USES (Uses)

(amino acid sequence; **chromoproteins** and their gene sequences
 from Australian **corals** and their use in genetic engineering
 of plant flower color and other applications)

IT 459878-45-6 459878-47-8 459878-49-0 459878-51-4 459878-53-6
 459878-55-8 459878-57-0 459878-59-2 459878-61-6 459878-63-8
 459878-65-0 459878-67-2 459878-69-4 459878-71-8 459878-73-0
 459878-76-3 459878-80-9 459878-82-1 459878-84-3 459878-86-5
 459878-88-7 459878-90-1 459878-92-3 459878-95-6 459878-97-8
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 459879-11-9 459879-14-2 459879-16-4 459879-18-6 459879-20-0
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RL: BSU (Biological study, unclassified); BUU (Biological use,
 unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL
 (Biological study); USES (Uses)

(amino acid sequence; **chromoproteins** and their gene sequences
 from Australian **corals** and their use in genetic
 transformation of plant flower color and other applications)

IT 459878-44-5 459878-46-7 459878-48-9 459878-50-3 459878-52-5
 459878-54-7 459878-56-9 459878-58-1 459878-60-5 459878-62-7
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 459878-83-2 459878-85-4 459878-87-6 459878-89-8 459878-91-2
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 459879-02-8 459879-04-0 459879-06-2 459879-07-3 459879-09-5
 459879-10-8 459879-12-0 459879-13-1 459879-15-3 459879-17-5
 459879-19-7 459879-21-1 459879-23-3 459879-25-5 459879-27-7
 459879-29-9 459879-31-3 459879-33-5 459879-35-7 459879-37-9
 459879-39-1 459879-41-5 459879-43-7 459879-45-9 459879-48-2
 459879-49-3 459879-51-7 459879-53-9 459879-55-1 459879-57-3
 459879-59-5 459879-61-9 459879-63-1 459879-65-3 459879-67-5
 459879-69-7 459879-71-1 459879-73-3 459879-74-4 459879-75-5
 459879-76-6 459879-77-7 459879-79-9 459879-81-3 459879-83-5
 459879-85-7 459879-87-9 459879-89-1 459879-91-5

RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)

(**nucleotide** sequence; **chromoproteins** and their gene sequences from Australian **corals** and their use in genetic transformation of plant flower color and other applications)

IT	459885-40-6	459885-41-7	459885-42-8	459885-43-9	459885-44-0
	459885-45-1	459885-46-2	459885-47-3	459885-48-4	459885-49-5
	459885-50-8	459885-51-9	459885-52-0	459885-53-1	459885-54-2
	459885-55-3	459885-63-3	459885-67-7	459885-68-8	459885-69-9
	459885-70-2	459885-71-3	459885-72-4	459885-73-5	459885-74-6
	459885-75-7	459885-76-8	459885-77-9	459885-78-0	459885-79-1
	459885-80-4	459885-81-5	459885-83-7	459885-84-8	459885-85-9
	459885-86-0	459885-87-1			

RL: PRP (Properties)

(unclaimed **nucleotide** sequence; **chromoproteins** and their gene sequences from Australian **corals** and their use in genetic transformation of plant flower color and other applications)

IT	459885-38-2	459885-39-3	459885-56-4	459885-57-5	459885-58-6
	459885-59-7	459885-60-0	459885-61-1	459885-62-2	459885-64-4
	459885-65-5	459885-66-6	459885-82-6	459886-69-2	459886-70-5
	459886-71-6	459886-72-7	459886-73-8		

RL: PRP (Properties)

(unclaimed **protein** sequence; **chromoproteins** and their gene sequences from Australian **corals** and their use in genetic transformation of plant flower color and other applications)

IT	138482-56-1	459783-42-7	459783-43-8	459783-44-9	459783-45-0
	459783-46-1	459783-47-2	459783-48-3	459783-49-4	459783-50-7
	459783-51-8	459783-52-9	459783-53-0	459783-54-1	459783-55-2
	459783-56-3	459783-57-4	459783-58-5	459783-59-6	459783-60-9
	459783-61-0	459783-62-1	459783-63-2	459885-34-8	459885-35-9
	459885-36-0	459885-37-1			

RL: PRP (Properties)

(unclaimed sequence; **chromoproteins** and their gene sequences from Australian **corals** and their use in genetic transformation of plant flower color and other applications)

L90 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:623293 HCAPLUS

DN 138:36347

ED Entered STN: 19 Aug 2002

TI The phylogeography and connectivity of the latitudinally widespread scleractinian **coral** *Plesiastrea versipora* in the Western Pacific

AU Rodriguez-Lanetty, M.; Hoegh-Guldberg, O.

CS Department of Life Sciences, Ewha Womans University, Seoul, 120-750, S. Korea

SO Molecular Ecology (2002), 11(7), 1177-1189

CODEN: MOECEO; ISSN: 0962-1083

PB Blackwell Science Ltd.

DT Journal

LA English

CC 12-4 (Nonmammalian Biochemistry)

Section cross-reference(s): 3

AB Whereas terrestrial animal populations might show genetic connectivity within a continent, marine species, such as hermatypic **corals**, may have connectivity stretching to all corners of the planet. We quantified the genetic variability within and among populations of the widespread scleractinian **coral**, *P. versipora* along the eastern Australian seaboard (4145 km) and the Ryukyu Archipelago (Japan, 681 km) using sequences of internal transcribed spacers (ITS1-2) from ribosomal DNA. Geog. patterns in genetic variability were deduced from a nested clade anal. (NCA) performed on a parsimony network haplotype. This anal. allowed the establishment of geog. assocns. in the distribution of

haplotypes within the network cladogram, therefore allowing us to deduce phylogeog. patterns based under models of restricted gene flow, fragmentation, and range expansion. No significant structure was found among Ryukyu Archipelago populations. The lack of an association between the positions of haplotypes in the cladogram with geog. location of these populations may be accounted for by a high level of gene flow of *P. versipora* within this region, probably due to the strong Kuroshio Current. In contrast, strong geog. assocns. were apparent among populations of *P. versipora* along the southeast coast of Australia. This pattern of restricted genetic connectivity among populations of *P. versipora* on the eastern seaboard of Australia seems to be associated with the present surface ocean current (the East Australian Current) on this side of the southwestern Pacific Ocean.

ST ribosomal DNA sequence coral population genetics

IT Genetic element

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(ITS (internal transcribed spacer); phylogeog. and connectivity of latitudinally widespread scleractinian coral in Western Pacific)

IT Haplotypes

Plesiastrea versipora

Population genetics

(phylogeog. and connectivity of latitudinally widespread scleractinian coral in Western Pacific)

IT DNA sequences

(phylogeog. and connectivity of the latitudinally widespread scleractinian coral *Plesiastrea versipora* in the Western Pacific)

IT DNA

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(rDNA; phylogeog. and connectivity of latitudinally widespread scleractinian coral in Western Pacific)

IT 411745-91-0, GenBank AF483778	411745-92-1, GenBank AF483779
411745-93-2, GenBank AF483780	411745-94-3, GenBank AF483781
411745-95-4, GenBank AF483782	411745-96-5, GenBank AF483783
411745-97-6, GenBank AF483784	411745-98-7, GenBank AF483785
411745-99-8, GenBank AF483786	411746-00-4, GenBank AF483787
411746-01-5, GenBank AF483788	411746-02-6, GenBank AF483789
411746-03-7, GenBank AF483790	411746-04-8, GenBank AF483791
411746-05-9, GenBank AF483792	411746-06-0, GenBank AF483793
411746-07-1, GenBank AF483794	411746-08-2, GenBank AF483795
411746-09-3, GenBank AF483796	411746-10-6, GenBank AF483797
411746-11-7, GenBank AF483798	411746-12-8, GenBank AF483799
411746-13-9, GenBank AF483800	411746-14-0, GenBank AF483801
411746-15-1, GenBank AF483802	411746-16-2, GenBank AF483803
411746-17-3, GenBank AF483804	411746-18-4, GenBank AF483805
411746-19-5, GenBank AF483806	411746-20-8, GenBank AF483807
411746-21-9, GenBank AF483808	411746-22-0, GenBank AF483809
411746-23-1, GenBank AF483810	411746-24-2, GenBank AF483811
411746-25-3, GenBank AF483812	411746-26-4, GenBank AF483813

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(nucleotide sequence; phylogeog. and connectivity of the latitudinally widespread scleractinian coral *Plesiastrea versipora* in the Western Pacific)

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L90 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:553586 HCAPLUS

DN 133:145927

ED Entered STN: 11 Aug 2000

TI **Protein** and cDNA sequence of **pigment protein**
from reef-building coral tissue

IN **Hoegh-Guldberg, Ove; Dove, Sophie**

PA University of Sydney, Australia

SO PCT Int. Appl., 49 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07H021-04

ICS C07K014-435; C12N015-12; C12N015-74; A61K007-42; A61P043-00

CC 3-3 (Biochemical **Genetics**)

Section cross-reference(s): 12, 41, 62

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000046233	A1	20000810	WO 2000-AU56	20000202 <--
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,				

IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
 MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
 SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 CA 2361038 AA 20000810 CA 2000-2361038 20000202 <--
 EP 1155028 A1 20011121 EP 2000-904699 20000202 <--
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO
 JP 2002535978 T2 20021029 JP 2000-597303 20000202 <--
 BR 2000007837 A 20030225 BR 2000-7837 20000202 <--
 PRAI AU 1999-8463 A 19990202 <--
 WO 2000-AU56 W 20000202 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000046233	ICM	C07H021-04
	ICS	C07K014-435; C12N015-12; C12N015-74; A61K007-42; A61P043-00
AB		Pigment protein derived from corals (PPCT), and polynucleotide mols. encoding the pigment protein are disclosed. The pigment protein is capable of emitting fluorescence upon irradiation by incident light, wherein maximal absorbance of the incident light is in the range of 320 - 600 nm, and maximal fluorescence emission is in the range 300 - 700 nm. Uses of the pigment protein are also disclosed, especially as a tissue marker, fluorescent marker or general dye stuff.
ST		cDNA sequence pigment protein reef coral; Acropora Montipora Pocillopora Porites Plesiastrea Seriatopora pigment protein
IT		Primers (nucleic acid) Primers (nucleic acid) RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses) (DNA; protein and cDNA sequence of pigment protein from reef-building coral tissue)
IT		Proteins, specific or class RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); USES (Uses) (PPCT, pigment; protein and cDNA sequence of pigment protein from reef-building coral tissue)
IT		Fluorescent pigments Pigments, biological (PPCT; protein and cDNA sequence of pigment protein from reef-building coral tissue)
IT		Optical filters (UV, comprising PPCT; protein and cDNA sequence of pigment protein from reef-building coral tissue)
IT		Sunscreens (comprising PPCT; protein and cDNA sequence of pigment protein from reef-building coral tissue)
IT		Gene, animal RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); USES (Uses) (for PPCT; protein and cDNA sequence of

- pigment protein** from reef-building coral tissue)
- IT **Proteins**, specific or class
 RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
 (green fluorescent, -like **protein**; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)
- IT **Oligonucleotides**
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (labeled; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)
- IT **DNA**
DNA
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (primer; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)
- IT **Acropora aspera**
Acropora digitifera
Acropora formosa
Acropora horrida
Acroporidae
 Biomarkers (biological responses)
Chromatophore, animal cell
Faviidae
Fungiidae
Merulinidae
 Molecular cloning
Montipora caliculata
Montipora monasteriata
Plesiastrea versipora
Pocillopora damicornis
Pocilloporidae
Porites lobata
Porites murrayensis
Poritidae
Protein sequences
Reef coral
Seriatopora hystrix
Stylophora pistillata
cDNA sequences
 (protein and cDNA sequence of **pigment protein** from reef-building coral tissue)
- IT **Probes (nucleic acid)**
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (protein and cDNA sequence of **pigment protein** from reef-building coral tissue)
- IT **287414-45-3 287414-46-4**
 RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
 (amino acid sequence; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)
- IT **287414-47-5 287414-48-6**
 RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
 (nucleotide sequence; **protein** and cDNA sequence of

pigment protein from reef-building coral tissue)

IT 287188-57-2
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)

IT 287188-54-9 287188-55-0
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(**protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)

IT 287416-71-1, 9: PN: W00046233 SEQID: 11 unclaimed DNA
287416-72-2 287416-73-3 287416-74-4 287416-75-5
RL: PRP (Properties)
(unclaimed **nucleotide** sequence; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)

IT 287416-69-7 287416-70-0
RL: PRP (Properties)
(unclaimed **protein** sequence; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)

IT 287386-75-8 287386-76-9
RL: PRP (Properties)
(unclaimed sequence; **protein** and cDNA sequence of **pigment protein** from reef-building coral tissue)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Dove, S; Biological Bulletin 1995, V189, P288 HCAPLUS
(2) Matz, M; Nature Biotechnology 1999, V17, P969 HCAPLUS

L90 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:683607 HCAPLUS
DN 132:21208
ED Entered STN: 28 Oct 1999
TI **Fluorescent** proteins from nonbioluminescent Anthozoa species
AU Matz, Mikhail V.; Fradkov, Arkady F.; Labas, Yulii A.; Savitsky, Aleksandr P.; Zaraisky, Andrey G.; Markelov, Mikhail L.; Lukyanov, Sergey A.
CS Inst. Bioorg. Chem., Russian Acad. Sci., Moscow, 117871, Russia
SO Nature Biotechnology (1999), 17(10), 969-973
CODEN: NABIF9; ISSN: 1087-0156

PB Nature America
DT Journal
LA English
CC 12-1 (Nonmammalian Biochemistry)
Section cross-reference(s): 3

AB We have cloned six **fluorescent** proteins homologous to the green **fluorescent** protein (GFP) from Aequorea victoria. Two of these have spectral characteristics dramatically different from GFP, emitting at yellow and red wavelengths. All the proteins were isolated from nonbioluminescent reef corals, demonstrating that GFP-like proteins are not always functionally linked to bioluminescence. The new proteins share the same β -can fold first observed in GFP, and this provided a basis for in vivo labeling was demonstrated by expressing them in mammalian cell culture and in mRNA microinjection assays in Xenopus embryos.

ST Anthozoa **fluorescent** protein gene sequence
IT Anemonia majano
Anthozoa
Clavularia
Discosoma

Discosoma striata**Protein sequences****Zoanthus****cDNA sequences**

(**fluorescent** proteins from nonbioluminescent Anthozoa species)

IT Gene, animal

RL: PRP (Properties)

(**fluorescent** proteins from nonbioluminescent Anthozoa species)

IT Proteins, specific or class

RL: PRP (Properties)

(**fluorescent; fluorescent** proteins from nonbioluminescent Anthozoa species)

IT 251925-26-5 251925-30-1 251925-33-4 251925-36-7 251925-39-0
251925-41-4

RL: PRP (Properties)

(amino acid sequence; **fluorescent** proteins from nonbioluminescent Anthozoa species)

IT 244895-09-8, GenBank AF168419 244895-10-1, GenBank AF168420
244895-11-2, GenBank AF168421 244895-12-3, GenBank AF168422
244895-13-4, GenBank AF168423 244895-14-5, GenBank AF168424

RL: PRP (Properties)

(**nucleotide** sequence; **fluorescent** proteins from nonbioluminescent Anthozoa species)

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L90 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:676171 HCAPLUS
ED Entered STN: 24 Oct 1999
TI Novel bioactivities from a **coral**, *Galaxea fascicularis*:
DNase-like activity and apoptotic activity against a multiple-drug-resistant leukemia cell line
AU Ding, J. L.; Fung, F. M. Y.; Ng, G. W. S.; Chou, L. M.
CS Marine Biotechnology Laboratory, Department of Biological Sciences, National University of Singapore, Singapore, 119260, Singapore
SO Marine Biotechnology (1999), 1(4), 328-336
CODEN: MABIFW; ISSN: 1436-2228
PB Springer-Verlag New York Inc.
DT Journal
LA English
AB From the **coral** *Galaxea fascicularis*, a crude mucus-like extract (MS) and subsequently its purified component (P6) appear to contain a DNase-like activity that indiscriminately digested **.lambda.DNA**, as well as naked genomic **DNAs** isolated from a multiple-drug-resistant murine leukemia cell line, P388/VCR, and a nontransformed liver cell line, BL8L. However, MS and P6 specifically induced in situ **DNA** digestion in cultured P388/VCR cells from 30 min onward. After 3 days of incubation with MS or P6, **DNA** degradation coincided with complete killing of P388/VCR. In situ **fluorescent** labeling of fragmented **DNA** revealed that P6 induced apoptosis of P388/VCR cells, occurring as early at 1.5 h. By day 3, all the P6-treated leukemia cells were apoptotic. In contrast, P6 caused neither in situ **DNA** digestion, nor apoptosis in the untransformed BL8L cells. Whether the DNase-like action of P6 is independent of or responsible for triggering the intrinsic endo-nuclease activity in the leukemia cell, thus leading to apoptosis, remains an object for further research. Nevertheless, the specificity of the apoptotic action of P6 on P388/VCR cells indicates its potential role in the development of an anticancer agent.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L90 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:556687 HCAPLUS
DN 129:286481
ED Entered STN: 02 Sep 1998
TI A **coral**-specific primer for PCR amplification of the internal transcribed spacer region in ribosomal DNA
AU Takabayashi, M.; Carter, D. A.; Loh, W. K. W.; Hoegh-Guldberg, O.
CS Sch. Biol. Sci., Sydney Univ., Australia
SO Molecular Ecology (1998), 7(7), 928-930
CODEN: MOECEO; ISSN: 0962-1083
PB Blackwell Science Ltd.

DT Journal
 LA English
 CC 3-1 (Biochemical **Genetics**)
 Section cross-reference(s): 12
 AB Primer A18S paired with nonspecific primer ITS4 is highly specific for **coral** sequences and amplifies pure **coral** DNA directly from adult (symbiotic) **coral** tissues from morphol. diverse Scleractinian families. This allows comparative mol. studies on **coral** species that do not spawn zooxanthella-free gametes. Such anal. with advance knowledge of previously refractory areas of **coral** biol. such as reproduction, hybridization, clonality, and population dynamics.
 ST **coral** ITS primer ribosomal DNA sequence
 IT Primers (**nucleic acid**)
 RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (A18S; first report of **coral**-specific primer to amplify ITS region)
 IT Genetic element
 RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
 (ITS (internal transcribed spacer); first report of **coral**-specific primer to amplify ITS region)
 IT **Coral**
 PCR (polymerase chain reaction)
 (first report of **coral**-specific primer to amplify ITS region)
 IT DNA
 RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
 (rDNA; first report of **coral**-specific primer to amplify ITS region)
 IT 214072-87-4
 RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (**nucleotide** sequence of A18S primer; first report of **coral**-specific primer to amplify ITS region)
 RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Hendriks, L; FEBS Letters 1990, V269, P445 HCAPLUS
 (2) Loh, W; Proceedings of Australian Coral Reef Society 75th Annual Conference, in press 1998
 (3) Odorico, D; Molecular Biology and Evolution 1997, V14, P465 HCAPLUS
 (4) Romano, S; Science 1996, V271, P640 HCAPLUS
 (5) Rowan, R; Marine Ecology Progress Series 1991, V71, P65 HCAPLUS
 (6) Smith, C; Molecular Ecology 1997, V6, P683 HCAPLUS
 (7) Takabayashi, M; Proceedings of Australian Coral Reef Society 75th Annual Conference, in press 1998
 (8) Thompson, J; Nucleic Acids Research 1994, V22, P4673 HCAPLUS
 (9) White, T; PCR Protocols: A Guide to Methods and Applications 1990, P315 HCAPLUS
 L90 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1996:51514 HCAPLUS
 DN 124:112839
 ED Entered STN: 25 Jan 1996
 TI Isolation and partial characterization of the pink and blue pigments of pocilloporid and acroporid **corals**
 AU Dove, Sophie G.; Takabayashi, Misaki; Hoegh-Guldberg, Ove
 CS School Biol. Sciences, Univ. Sydney, Sydney, 2006 NSW, Australia
 SO Biological Bulletin (Woods Hole, Massachusetts) (1995), 189(3), 288-97

CODEN: BIBUBX; ISSN: 0006-3185

PB Marine Biological Laboratory

DT Journal

LA English

CC 12-1 (Nonmammalian Biochemistry)

AB The compds. responsible for the pink and blue colors of two families of hermatypic **corals** (Pocilloporidae, Acroporidae) from the southern Great Barrier Reef was isolated and biochem. characterized. Isolation of the pink pigment from Pocillopora damicornis (named pocilloporin, λ_{\max} = 560 nm, 390 nm) revealed that it was a hydrophilic **protein** dimer with a native mol. weight of approx. 54 kDa and subunits of 28 kDa. The subunits are not linked by disulfide bonds. Attempts to dissociate the chromophore from the **protein** proved unsuccessful. Denaturing the **protein** with heat (60°) or 5% SDS removed the 560-nm absorbance peak without introducing a detectable bathochromic shift. In acetone, ethanol, ether, and chloroform, the pigment ppts. out of solution, leaving a colorless supernatant. These properties suggest that the **protein** and chromophore are covalently linked. Ion anal. revealed that the pigment does not have metal ions chelated to it. **Coral** pigments were also isolated from pink morphs of other pocilloporids, Seriatopora hystrix (λ_{\max} = 560 nm) and Stylophora pistillata (λ_{\max} = 560 nm); and from bluish regions of the acroporids, Acropora formosa (blue; λ_{\max} = 590 nm) and Acropora digitifera (purple; λ_{\max} = 590 nm). With the exception of A. formosa, all the **corals** examined had pigments with the same native (54 kDa) and subunit (28 kDa) mol. wts. as those of P. damicornis. A. formosa pigment has a native mol. weight of about 82.6 kDa and three subunits of 28 kDa. The pigments isolated from each of these **coral** species have properties similar to those described for P. damicornis. Isolation and biochem. purification of the pigment enabled the exploration of the function of the pink pigment. Three possibilities were eliminated. The compound does not act as (i) a photoprotectant for shielding the photosynthetic pigments of symbiotic zooxanthellae against excessive irradiance, (ii) a fluorescent coupling agent for amplifying the levels of photosynthetically active radiation available for resident zooxanthellae, or (iii) a UV-screen against the high UV levels of shallow tropical marine environments.

ST pigment **coral**IT **Acropora digitifera****Acropora formosa**

Pigments, biological

Pocillopora damicornis**Seriatopora hystrix****Stylophora pistillata**(isolation and partial characterization of the pink and blue pigments of pocilloporid and acroporid **corals**)

IT 172965-07-0P, Pocilloporin

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)

(isolation and partial characterization of the pink and blue pigments of pocilloporid and acroporid **corals**)

L90 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:677086 HCAPLUS

DN 121:277086

ED Entered STN: 10 Dec 1994

TI Effect of ammonium enrichment on animal and algal biomass of the **coral** Pocillopora damicornis

AU Muller-Parker, G.; McCloskey, L. R.; Hoegh-Guldberg, O.; McAuley, P. J.

CS Dep. Biol., Western Washington Univ., Bellingham, WA, 98225-9060, USA

SO Pacific Science (1994), 48(3), 273-83

CODEN: PASCAP; ISSN: 0030-8870

DT Journal
LA English
CC 12-6 (Nonmammalian Biochemistry)
AB Algal and animal biomass parameters of colonies of the Pacific coral *Pocillopora damicornis* were measured as a function of time of exposure to elevated concns. of seawater ammonium (20 and 50 μM [(NH₄)₂SO₄]) ranging from 2 to 8 wk. Areal concns. of zooxanthellae, chlorophyll, and protein increased with 20 μM ammonium addition. During the 8-wk period of exposure to 20 μM ammonium, the population d. of zooxanthellae increased from 3.5 to 7.5 + 105 cells/cm², chlorophyll a content of zooxanthellae increased from 5.7 to 8.6 pg, and animal protein concentration doubled (from 0.74 to 1.38 mg/cm²). These data indicate that both the coral animal and the zooxanthellae respond to the addition of exogenous dissolved inorg. nitrogen provided as 20 μM ammonium. Growth of the symbiotic association in response to the addition of 20 μM ammonium adds further evidence to support the argument that growth of tropical symbioses is limited by the availability of nitrogen. However, the coral response is likely to depend on the concentration of ammonium provided, because the biomass parameters of corals held at 50 μM ammonium did not change significantly with time of exposure to the added nutrient.

ST ammonia zooxanthellae chlorophyll protein coral
IT *Pocillopora damicornis*
(ammonium enrichment effect on animal and algal biomass of coral)
IT Proteins, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(ammonium enrichment effect on protein content of coral)
IT Zooxanthellae
(ammonium enrichment effect on zooxanthellae and its chlorophyll content of coral)
IT Cell proliferation
(ammonium enrichment effect on zooxanthellae proliferation in coral)
IT 7783-20-2, Ammonium sulfate, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ammonium enrichment effect on animal and algal biomass of coral)
IT 479-61-8, Chlorophyll a
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(ammonium enrichment effect on zooxanthellae and its chlorophyll content of coral)

=> => fil medline

FILE 'MEDLINE' ENTERED AT 15:54:05 ON 12 AUG 2004

FILE LAST UPDATED: 11 AUG 2004 (20040811/UP). FILE COVERS 1951 TO DATE.

On February 29, 2004, the 2004 MeSH terms were loaded. See HELP RLOAD for details. OLD MEDLINE now back to 1951.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2004 vocabulary. See <http://www.nlm.nih.gov/mesh/> and http://www.nlm.nih.gov/pubs/techbull/nd03/nd03_mesh.html for a description of changes.

This file contains CAS Registry Numbers for easy and accurate

substance identification.

=> d his

(FILE 'HOME' ENTERED AT 14:46:41 ON 12 AUG 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 14:46:51 ON 12 AUG 2004

L1 1 S WO2000-AU56/AP, PRN OR AU99-8463/AP, PRN
SEL RN

FILE 'REGISTRY' ENTERED AT 14:47:29 ON 12 AUG 2004

L2 16 S E1-E16
L3 1 S L2 AND C23H44N6O7
E C23H44N6O7/MF
L4 8 S E3 AND LYSINE
L5 1 S L4 AND SERYL AND VALYL AND ISOLEUCYL AND ALANYL
L6 1 S L2 AND C16H22N4O6
E C16H22N4O6/MF
L7 1 S E3 AND GLYCINE AND GLUTAM? AND TYROS?
L8 1 S L2 AND 17/SQL
L9 3 S L3, L6, L8
L10 2 S L2 AND (235 OR 231)/SQL
L11 5 S L9, L10
L12 7 S L2 AND NUCLEIC/FS
L13 2 S L12 AND 841/SQL

FILE 'HCAPLUS' ENTERED AT 14:57:44 ON 12 AUG 2004

L14 2 S L11
L15 1 S L13
L16 2 S L14, L15
L17 2 S L1, L16
E CORAL/CT
E E3+ALL
L18 1921 S E4, E5, E6
E CORAL/CT
L19 287 S E8
E ACROPORA/CT
L20 213 S E3-E56
E E3+ALL
L21 209 S E4+NT
E FAVIIDAE/CT
L22 3 S E3
E E3+ALL
E FUNGIIDAE/CT
L23 2 S E3
E E3+ALL
L24 68 S E3
E MERULINIDAE/CT
L25 2 S E3
E MONTIPORA/CT
L26 58 S E3-E19
E E3+ALL
L27 57 S E4+NT
E PLESIASTREA/CT
L28 15 S E3, E4
E E4+ALL
E POCILLOPORA/CT
L29 115 S E3-E12
E E3+ALL
L30 111 S E4+NT
E PORITES/CT
L31 178 S E3-E24

		E E3+ALL
L32	177	S E4+NT
		E PORITIDAE/CT
L33	6	S E3
		E SERIATOPORA/CT
L34	18	S E3-E6
		E E6+ALL
		E STYLOPHORA/CT
L35	66	S E3-E6
		E ACANTHASTREA/CT
L36	3	S E3-E5
		E AEQUOREA/CT
L37	299	S E3-E9
		E E3+ALL
L38	299	S E4+NT
		E ANEMONIA/CT
L39	242	S E3-E8
		E ANTHOZOA/CT
L40	77	S E3
		E CASSIOPEA/CT
L41	52	S E3-E9
		E CAULASTREA/CT
L42	1	S E3
		E CLAVULARIA/CT
L43	94	S E3-E11
		E E3+ALL
L44	94	S E4+NT
		E DISCOSOMA/CT
L45	57	S E3-E5
		E MILLEPORA/CT
L46	34	S E3-E15
		E PAVONA/CT
L47	25	S E3-E9
		E PLATYGYRA/CT
L48	17	S E3-E9
		E POCILLOPORA/CT
L49	115	S E3-E12
		E ZOANTHUS/CT
L50	56	S E3-E7
		E ARABIDOPSIS/CT
L51	14013	S E3-E31
		E BOS TAURUS/CT
L52	5724	S E3-E7
		E CAPRA/CT
L53	1302	S E3-E26
		E DIANTHUS/CT
L54	204	S E3-E31
		E EMBRYOPHYTA/CT
		E EQUUS/CT
		E E17+ALL
L55	5980	S CORAL
L56	27411	S L18-L55
L57	1	S L56 AND PPCT
L58	1	S L56 AND ?PPCT?
L59	117	S L56 AND PIGMENT (L) PROTEIN
L60	66	S L56 AND PIGMENT (S) PROTEIN
L61	11	S L56 AND PROTEIN#/CW (L) PIGMENT
L62	3	S L56 AND CHROMATOPHORE
		E CHROMATOPHORE/CT
L63	1	S L56 AND E3-E11
		E E6+ALL
L64	1	S L56 AND E9, E10, E8+NT
L65	1487	S L56 AND FLUORESCEN?

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      E FLUORESCEN/CT
      E E99+ALL
L66      3 S L56 AND E9,E8+NT
L67      211 S L56 AND E7+OLD,NT,PFT,RT
      E E7+ALL
L68      118 S L56 AND E4,E5,E3+NT
L69      1719 S L57-L68
L70      233 S L69 AND ?NUCLEIC?
L71      485 S L69 AND ?NUCLEO?
L72      442 S L69 AND DNA
L73      721 S L69 AND GENETIC?/SC,SX
      E DNA/CT
      E E3+ALL
L74      305 S L69 AND E5,E6,E3+NT
L75      323 S L69 AND E167+NT
L76      1 S L69 AND E168-E170
L77      77 S L69 AND (E175+OLD,NT,PFT OR E176+OLD,NT,PFT)
      E PROTEIN SEQUENCE/CT
L78      388 S L69 AND E11+OLD,NT,PFT,RT
L79      911 S L70-L78
L80      235 S L79 AND (PD<=19990202 OR PRD<=19990202 OR AD<=19990202)
L81      8 S L80 AND ?PIGMENT? AND ?FLUORESCEN?
L82      3 S L80 AND CORAL
L83      4 S L17,L82
      E DOVE S/AU
L84      36 S E3,E6,E11-E13
      E HOECH GULDBERG O/AU
      E HOEGH GULDBERG O/AU
L85      31 S E2-E4
      E HOEGHGULDBERG O/AU
L86      27 S L84,L85 AND L56
L87      9 S L86 AND (?PROTEIN? OR ?NUCLEIC? OR ?NUCLEO? OR ?OLIGO? OR ?PE
L88      5 S L86 AND (GENETIC? OR PROTEIN?)/SC,SX
L89      9 S L87,L88
L90      11 S L83,L89
L91      18 S L86 NOT L90

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FILE 'REGISTRY' ENTERED AT 15:44:52 ON 12 AUG 2004

FILE 'HCAPLUS' ENTERED AT 15:45:18 ON 12 AUG 2004

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L92      12 S L80 AND CHROMOPHORE NOT L81,L90

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FILE 'MEDLINE' ENTERED AT 15:47:42 ON 12 AUG 2004

```

      E CORAL/CT
      E E6+ALL
      E E2+ALL
      E E4+ALL
L93      4179 S E4+NT
L94      1401 S L93 AND D12./CT
L95      485 S L93 AND D13./CT
      E MOLECULAR SEQUENCES/CT
      E E2+ALL
L96      603 S L93 AND E5+NT
L97      1209 S L94-L96 AND PY<=1999
L98      4 S L97 AND ?PIGMENT?
L99      0 S L97 AND CHROMATOPHOR?
      E CHROMATOPHORE/CT
      E E5+ALL
L100     0 S L97 AND E4+NT
      E E9+ALL
L101     1 S L97 AND E8
      E FLUORESCENCE/CT
      E E3+ALL

```

L102 137 S L97 AND E4+NT
 L103 0 S L102 AND L98,L101
 L104 4 S L98,L101
 L105 27 S L97 AND E5+NT
 L106 0 S L105 AND CORAL
 L107 31 S L104,L105
 L108 10 S L107 NOT AB/FA
 L109 21 S L107 NOT L108

FILE 'MEDLINE' ENTERED AT 15:54:05 ON 12 AUG 2004

=> d all tot l108

L108 ANSWER 1 OF 10 MEDLINE on STN
 AN 97002318 MEDLINE
 DN PubMed ID: 8849718
 TI Structural biology. Another green revolution.
 AU Boxer S G
 SO Nature, (1996 Oct 10) 383 (6600) 484-5.
 Journal code: 0410462. ISSN: 0028-0836.
 CY ENGLAND: United Kingdom
 DT News Announcement
 LA English
 FS Priority Journals
 EM 199611
 ED Entered STN: 19961219
 Last Updated on STN: 19980206
 Entered Medline: 19961112
 CT Animals
 Fluorescence
 ***Luminescent Proteins**
 Luminescent Proteins: CH, chemistry
 Luminescent Proteins: PH, physiology
 Photochemistry
 Protein Conformation
 Recombinant Fusion Proteins: AN, analysis
 Scyphozoa: PH, physiology
 RN 147336-22-9 (green fluorescent protein)
 CN 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)

L108 ANSWER 2 OF 10 MEDLINE on STN
 AN 79187800 MEDLINE
 DN PubMed ID: 36127
 TI Renilla reniformis bioluminescence: luciferase-catalyzed production of nonradiating excited states from luciferin analogues and elucidation of the excited state species involved in energy transfer to Renilla green fluorescent protein.
 AU Hart R C; Matthews J C; Hori K; Cormier M J
 SO Biochemistry, (1979 May 29) 18 (11) 2204-10.
 Journal code: 0370623. ISSN: 0006-2960.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 197908
 ED Entered STN: 19900315
 Last Updated on STN: 19980206
 Entered Medline: 19790829
 CT Animals
 ***Cnidaria: ME, metabolism**
 Energy Transfer
 Fluorescence
 *Luciferase: ME, metabolism

*Luciferins: AA, analogs & derivatives

***Proteins: ME, metabolism**

Spectrophotometry

Structure-Activity Relationship

Substrate Specificity

CN 0 (Luciferins); 0 (Proteins); EC 1.13.12.- (Luciferase)

L108 ANSWER 3 OF 10 MEDLINE on STN

AN 79109636 MEDLINE

DN PubMed ID: 33175

TI An energy transfer protein in coelenterate bioluminescence.
Characterization of the Renilla green-fluorescent protein.

AU Ward W W; Cormier M J

SO Journal of biological chemistry, (1979 Feb 10) 254 (3) 781-8.

Journal code: 2985121R. ISSN: 0021-9258.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 197904

ED Entered STN: 19900315

Last Updated on STN: 19950206

Entered Medline: 19790425

CT Check Tags: Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.

Amino Acids: AN, analysis

***Cnidaria: ME, metabolism**

Energy Transfer

Fluorescence

Luminescence

Molecular Weight

***Proteins**

Proteins: IP, isolation & purification

Proteins: ME, metabolism

Spectrometry, Fluorescence

Spectrophotometry

CN 0 (Amino Acids); 0 (Proteins)

L108 ANSWER 4 OF 10 MEDLINE on STN

AN 79000349 MEDLINE

DN PubMed ID: 28749

TI Chemical and physical properties of aequorin and the green fluorescent protein isolated from Aequorea forskalea.

AU Prendergast F G; Mann K G

SO Biochemistry, (1978 Aug 22) 17 (17) 3448-53.

Journal code: 0370623. ISSN: 0006-2960.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 197812

ED Entered STN: 19900314

Last Updated on STN: 19950206

Entered Medline: 19781202

CT Check Tags: Support, U.S. Gov't, P.H.S.

***Aequorin**

Aequorin: IP, isolation & purification

Amino Acid Sequence

Amino Acids: AN, analysis

Animals

***Cnidaria: AN, analysis**

Fluorescence

***Luminescent Proteins**

Luminescent Proteins: IP, isolation & purification

Macromolecular Systems

Molecular Weight

Proteins*Proteins: IP, isolation & purification*****Scyphozoa: AN, analysis**

RN 50934-79-7 (Aequorin)

CN 0 (Amino Acids); 0 (Luminescent Proteins); 0 (Macromolecular Systems); 0 (Proteins)

L108 ANSWER 5 OF 10 MEDLINE on STN

AN 75150432 MEDLINE

DN PubMed ID: 4156520

TI Bioluminescence: Chemical Aspects.

AU Cormier M J; Wampler J E; Hori K

SO Fortschritte der Chemie organischer Naturstoffe. Progress in the chemistry of organic natural products. Progres dans la chimie des substances organiques naturelles, (1973) 30 1-60. Ref: 149
Journal code: 0370724. ISSN: 0071-7886.

CY Austria

DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

LA English

FS Priority Journals

EM 197508

ED Entered STN: 19900310

Last Updated on STN: 19970203

Entered Medline: 19750811

CT Animals

Bacteria: ME, metabolism

Cnidaria: ME, metabolism

Crustacea: ME, metabolism

Electric Stimulation

Fluorescence

Fresh Water

Kinetics

Light

Luciferase: ME, metabolism

***Luciferins**

Luciferins: ME, metabolism

***Luminescence**

Mollusca: ME, metabolism

Oligochaeta

Proteins: ME, metabolism

Seawater

Species Specificity

Spectrometry, Fluorescence

Spectrophotometry

CN 0 (Luciferins); 0 (Proteins); EC 1.13.12.- (Luciferase)

L108 ANSWER 6 OF 10 MEDLINE on STN

AN 75036113 MEDLINE

DN PubMed ID: 4154104

TI Bioluminescence in coelenterates.

AU Cormier M J; Hori K; Anderson J M

SO Biochimica et biophysica acta, (1974 Oct 31) 346 (2) 137-64.

Ref: 96

Journal code: 0217513. ISSN: 0006-3002.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

LA English

FS Priority Journals

EM 197501

ED Entered STN: 19900310
 Last Updated on STN: 19950206
 Entered Medline: 19750131
 CT Check Tags: Comparative Study
 Animals
 ***Cnidaria**
 Cnidaria: AN, analysis
 Cnidaria: EN, enzymology
 Cnidaria: ME, metabolism
 Cnidaria: UL, ultrastructure
 Fluorescence
 Luciferase: ME, metabolism
 Luciferins: AN, analysis
 *Luminescence
 Microscopy, Electron
 Oxygen Consumption
 Photochemistry
 Proteins: AN, analysis
 Species Specificity
 Spectrometry, Fluorescence
 CN 0 (Luciferins); 0 (Proteins); EC 1.13.12.- (Luciferase)

L108 ANSWER 7 OF 10 MEDLINE on STN
 AN 74175333 MEDLINE
 DN PubMed ID: 4151620
 TI Intermolecular energy transfer in the bioluminescent system of Aequorea.
 AU Morise H; Shimomura O; Johnson F H; Winant J
 SO Biochemistry, (1974 Jun 4) 13 (12) 2656-62.
 Journal code: 0370623. ISSN: 0006-2960.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 197407
 ED Entered STN: 19900310
 Last Updated on STN: 19950206
 Entered Medline: 19740730
 CT **Amino Acids: AN, analysis**
 Animals
 Calcium: PD, pharmacology
 Chromatography, DEAE-Cellulose
 Chromatography, Gel
 Chromatography, Ion Exchange
 ***Cnidaria: ME, metabolism**
 Crystallization
 Electrophoresis, Disc
 Energy Transfer
 Fluorescence
 Luminescence
 Protein Binding
 Proteins: AN, analysis
 Proteins: IP, isolation & purification
 ***Proteins: ME, metabolism**
 Proteins: PD, pharmacology
 Spectrometry, Fluorescence
 Spectrophotometry
 Spectrophotometry, Ultraviolet
 RN 7440-70-2 (Calcium)
 CN 0 (Amino Acids); 0 (Proteins)

L108 ANSWER 8 OF 10 MEDLINE on STN
 AN 72118544 MEDLINE
 DN PubMed ID: 4400819

TI Molecular weight of the photoprotein aequorin.
AU Kohama Y; Shimomura O; Johnson F H
SO Biochemistry, (1971 Oct 26) 10 (22) 4149-52.
Journal code: 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197205
ED Entered STN: 19900310
Last Updated on STN: 19950206
Entered Medline: 19720503
CT Animals
Calcium
Chromatography
Chromatography, Gel
*Cnidaria
Electrophoresis
Fluorescence
Heat
Hydrogen-Ion Concentration
Luminescence
Macromolecular Systems
Molecular Weight
Protein Denaturation
*Proteins
Quinones
Sodium Dodecyl Sulfate
Ultracentrifugation
Urea
RN 151-21-3 (Sodium Dodecyl Sulfate); 57-13-6 (Urea); 7440-70-2 (Calcium)
CN 0 (Macromolecular Systems); 0 (Proteins); 0 (Quinones)

L108 ANSWER 9 OF 10 MEDLINE on STN
AN 71236452 MEDLINE
DN PubMed ID: 4397528
TI Energy transfer in a bioluminescent system.
AU Morin J G; Hastings J W
SO Journal of cellular physiology, (1971 Jun) 77 (3) 313-8.
Journal code: 0050222. ISSN: 0021-9541.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197108
ED Entered STN: 19900101
Last Updated on STN: 19950206
Entered Medline: 19710823
CT Animals
Calcium
*Cnidaria: PH, physiology
Color
*Energy Transfer
Fluorescence
*Luminescence
Proteins: IP, isolation & purification
Spectrum Analysis
RN 7440-70-2 (Calcium)
CN 0 (Proteins)

L108 ANSWER 10 OF 10 MEDLINE on STN
AN 71077793 MEDLINE
DN PubMed ID: 4395343

TI Isolation and properties of Renilla reniformis luciferase, a low molecular weight energy conversion enzyme.
 AU Karkhanis Y D; Cormier M J
 SO Biochemistry, (1971 Jan 19) 10 (2) 317-26.
 Journal code: 0370623. ISSN: 0006-2960.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 197102
 ED Entered STN: 19900101
 Last Updated on STN: 19980206
 Entered Medline: 19710224
 CT **Amino Acids: AN, analysis**
 Autoanalysis
 Chemistry
 Chemistry, Physical
 Chromatography, Gel
 *Cnidaria: EN, enzymology
 Electrophoresis, Disc
 Energy Transfer
Fluorescence
 Gels
 Luciferase: AN, analysis
 *Luciferase: IP, isolation & purification
 Luciferins: ME, metabolism
 Molecular Weight
 Spectrophotometry
 Sulfhydryl Compounds: AN, analysis
 Ultracentrifugation
 CN 0 (Amino Acids); 0 (Gels); 0 (Luciferins); 0 (Sulfhydryl Compounds); EC 1.13.12.- (Luciferase)

=> d all tot 1109 tot

L109 ANSWER 1 OF 21 MEDLINE on STN
 AN 1999322087 MEDLINE
 DN PubMed ID: 10390501
 TI Evaluation of transcriptional fusions with green fluorescent protein versus luciferase as reporters in bacterial mutagenicity tests.
 AU Justus T; Thomas S M
 CS School of Biological Sciences, The Flinders University of South Australia, GPO Box 2100, Adelaide, SA 5001, Australia.
 SO Mutagenesis, (1999 Jul) 14 (4) 351-6.
 Journal code: 8707812. ISSN: 0267-8357.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199909
 ED Entered STN: 19990913
 Last Updated on STN: 19990913
 Entered Medline: 19990902
 AB A bacterial plasmid was constructed on which the regulatory region of the umuC gene of Escherichia coli was fused to the coding sequence of the green fluorescent protein gene (gfp) from the jellyfish Aequorea victoria. Escherichia coli AB1157 strains carrying the plasmid emitted fluorescence in the presence of mutagens that induce the SOS DNA repair system. Data on tests with nitrosoguanidine, methylmethane sulphonate and UV radiation (254 nm) are presented. Although fluorescent detection using this system was not as rapid or sensitive as a similar luminescent equivalent (umuC-luxAB), the gfp reporter system was more robust. Escherichia coli

umu gene induction was also analysed in Salmonella typhimurium TA1537 cells following plasmid transfer and exposure to the same range of mutagens. There was no significant difference in sensitivity between the two species. These preliminary results will provide the basis for development of mutagenicity test systems useful in the testing of complex mixtures, such as environmental samples, and the investigation of physiological parameters influencing spontaneous mutagenesis in bacteria.

CT Check Tags: Comparative Study; Support, Non-U.S. Gov't

Animals

Bacteria: DE, drug effects

*Bacteria: GE, genetics

Bacteria: GD, growth & development

Bacteria: RE, radiation effects

***Bacterial Proteins: GE, genetics**

Escherichia coli: GE, genetics

***Escherichia coli Proteins**

Fluorescence

Gene Fusion

Genes, Reporter: DE, drug effects

*Genes, Reporter: GE, genetics

Genes, Reporter: RE, radiation effects

*Luciferase: CH, chemistry

Luciferase: GE, genetics

Luminescence

***Luminescent Proteins: CH, chemistry**

Luminescent Proteins: GE, genetics

Methyl Methanesulfonate: TO, toxicity

*Mutagenicity Tests: MT, methods

Mutagens: TO, toxicity

Nitrosoguanidines: TO, toxicity

SOS Response (Genetics): DE, drug effects

*SOS Response (Genetics): GE, genetics

SOS Response (Genetics): RE, radiation effects

Salmonella typhimurium: GE, genetics

Scyphozoa

Ultraviolet Rays: AE, adverse effects

RN 147336-22-9 (green fluorescent protein); 66-27-3 (Methyl Methanesulfonate); 98059-80-4 (UmuC mutagenesis protein, E coli)

CN 0 (Bacterial Proteins); 0 (Escherichia coli Proteins); 0 (Luminescent Proteins); 0 (Mutagens); 0 (Nitrosoguanidines); EC 1.13.12.- (Luciferase)

L109 ANSWER 2 OF 21 MEDLINE on STN

AN 1999287105 MEDLINE

DN PubMed ID: 10360360

TI Three photoconvertible forms of green fluorescent protein identified by spectral hole-burning.

CM Erratum in: Nat Struct Biol 1999 Jul;6(7):706

AU Creemers T M; Lock A J; Subramaniam V; Jovin T M; Volker S

CS Center for the Study of the Excited States of Molecules, Huygens and Gorlaeus Laboratories, University of Leiden, The Netherlands.

SO Nature structural biology, (1999 Jun) 6 (6) 557-60.

Journal code: 9421566. ISSN: 1072-8368.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199906

ED Entered STN: 19990712

Last Updated on STN: 20000303

Entered Medline: 19990623

AB Several studies have led to the conclusion that, in the green fluorescent protein (GFP) of the jellyfish Aequorea victoria, a photoconversion involving excited-state proton transfer occurs from an A- to a B-form,

while an intermediate I-form was held responsible for the green fluorescence. Here we have identified the I-form of wild-type GFP in absorption, located the 0-0 transitions of all three forms A, B and I, and determined vibrational frequencies of the ground and excited states. The intrinsically narrow 0-0 transitions are revealed by the wavelengths at which holes can be burnt. The pathways of photointerconversion are unraveled by excitation, emission and hole-burning spectroscopy. We present an energy-level scheme that has significant implications for GFP-mutants, which likewise can occur in the three photo-interconvertible forms.

CT Check Tags: Support, Non-U.S. Gov't

Absorption

Animals

***Fluorescence**

Lasers

***Luminescent Proteins: CH, chemistry**

Luminescent Proteins: GE, genetics

***Luminescent Proteins: ME, metabolism**

Protein Conformation

Protons

Scyphozoa

Spectrum Analysis

Temperature

RN 147336-22-9 (green fluorescent protein)

CN 0 (Luminescent Proteins); 0 (Protons)

L109 ANSWER 3 OF 21 MEDLINE on STN

AN 1999238303 MEDLINE

DN PubMed ID: 10220315

TI Structural and spectral response of green fluorescent protein variants to changes in pH.

AU Elsliger M A; Wachter R M; Hanson G T; Kallio K; Remington S J

CS Institute of Molecular Biology, Department of Physics, University of Oregon, Eugene 97403, USA.

NC 1 F32 GM19075-01 (NIGMS)

SO Biochemistry, (1999 Apr 27) 38 (17) 5296-301.

Journal code: 0370623. ISSN: 0006-2960.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS PDB-1EMG; PDB-BNL-26390

EM 199905

ED Entered STN: 19990601

Last Updated on STN: 19990601

Entered Medline: 19990514

AB The green fluorescent protein (GFP) from the jellyfish *Aequorea victoria* has become a useful tool in molecular and cell biology. Recently, it has been found that the fluorescence spectra of most mutants of GFP respond rapidly and reversibly to pH variations, making them useful as probes of intracellular pH. To explore the structural basis for the titration behavior of the popular GFP S65T variant, we determined high-resolution crystal structures at pH 8.0 and 4.6. The structures revealed changes in the hydrogen bond pattern with the chromophore, suggesting that the pH sensitivity derives from protonation of the chromophore phenolate. Mutations were designed in yellow fluorescent protein (S65G/V68L/S72A/T203Y) to change the solvent accessibility (H148G) and to modify polar groups (H148Q, E222Q) near the chromophore. pH titrations of these variants indicate that the chromophore pKa can be modulated over a broad range from 6 to 8, allowing for pH determination from pH 5 to pH 9. Finally, mutagenesis was used to raise the pKa from 6.0 (S65T) to 7.8 (S65T/H148D). Unlike other variants, S65T/H148D exhibits two pH-dependent excitation peaks for green fluorescence with a clean isosbestic point.

This raises the interesting possibility of using fluorescence at this isosbestic point as an internal reference. Practical real time in vivo applications in cell and developmental biology are proposed.

CT Check Tags: Support, Non-U.S. Gov't; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.

Amino Acid Substitution: GE, genetics

Animals

Crystallography, X-Ray

Glutamic Acid: GE, genetics

Histidine: GE, genetics

Hydrogen-Ion Concentration

Indicators and Reagents

*Luminescent Proteins: CH, chemistry

*Luminescent Proteins: GE, genetics

Mutagenesis, Site-Directed

Pigments: CH, chemistry

Pigments: GE, genetics

Protons

Scyphozoa

Serine: GE, genetics

Spectrometry, Fluorescence

Structure-Activity Relationship

Threonine: GE, genetics

RN 147336-22-9 (green fluorescent protein); 56-45-1 (Serine); 56-86-0 (Glutamic Acid); 71-00-1 (Histidine); 72-19-5 (Threonine)

CN 0 (Indicators and Reagents); 0 (Luminescent Proteins); 0 (Pigments); 0 (Protons)

L109 ANSWER 4 OF 21 MEDLINE on STN

AN 1999185010 MEDLINE

DN PubMed ID: 10085026

TI Examination of *Listeria monocytogenes* intracellular gene expression by using the green fluorescent protein of *Aequorea victoria*.

AU Freitag N E; Jacobs K E

CS Department of Immunology and Microbiology, Wayne State University School of Medicine, Detroit, Michigan, USA.. nfreitag@med.wayne.edu

NC AI41816 (NIAID)

SO Infection and immunity, (1999 Apr) 67 (4) 1844-52.

Journal code: 0246127. ISSN: 0019-9567.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199904

ED Entered STN: 19990511

Last Updated on STN: 19990511

Entered Medline: 19990426

AB The ActA protein of *Listeria monocytogenes* is an essential virulence factor and is required for intracellular bacterial motility and cell-to-cell spread. *plcB*, cotranscribed with *actA*, encodes a broad-specificity phospholipase C that contributes to lysis of host cell vacuoles and cell-to-cell spread. Construction of a transcriptional fusion between *actA-plcB* and the green fluorescent protein gene of *Aequorea victoria* has facilitated the detailed examination of patterns of *actA/plcB* expression within infected tissue culture cells. *actA/plcB* expression began approximately 30 min postinfection and was dependent upon entry of *L. monocytogenes* into the host cytosol. *L. monocytogenes* Deltahly mutants, which are unable to escape from host cell vacuoles, did not express *actA/plcB* at detectable levels within infected tissue culture cells; however, complementation of the *hly* defect allowed entry of the bacteria into the host cytoplasm and subsequent *actA/plcB* expression. These results emphasize the ability of *L. monocytogenes* to sense the different host cell compartment environments encountered during the course

of infection and to regulate virulence gene expression in response.

CT Check Tags: Support, U.S. Gov't, P.H.S.

Animals

***Bacterial Proteins: GE, genetics**

Cell Compartmentation

Cell Line

Chromosomes, Bacterial

Fluorescence

***Gene Expression Regulation, Bacterial**

Intracellular Fluid

***Listeria monocytogenes: GE, genetics**

Listeria monocytogenes: GD, growth & development

Luminescent Proteins: GE, genetics

***Membrane Proteins: GE, genetics**

Mutagenesis

***Phospholipase C: GE, genetics**

Recombinant Fusion Proteins: GE, genetics

Scyphozoa

Transcription, Genetic

RN 144430-05-7 (actA protein, Listeria monocytogenes); 147336-22-9 (green fluorescent protein)

CN 0 (Bacterial Proteins); 0 (Luminescent Proteins); 0 (Membrane Proteins); 0 (Recombinant Fusion Proteins); EC 3.1.4.- (phosphatidylcholine-specific phospholipase C); EC 3.1.4.3 (Phospholipase C)

L109 ANSWER 5 OF 21 MEDLINE on STN

AN 1999030606 MEDLINE

DN PubMed ID: 9811837

TI Chemical synthesis of the precursor molecule of the Aequorea green fluorescent protein, subsequent folding, and development of fluorescence.

AU Nishiuchi Y; Inui T; Nishio H; Bodi J; Kimura T; Tsuji F I; Sakakibara S

CS Peptide Institute, Protein Research Foundation, Minoh-shi, Osaka 562, Japan.

SO Proceedings of the National Academy of Sciences of the United States of America, (1998 Nov 10) 95 (23) 13549-54.

Journal code: 7505876. ISSN: 0027-8424.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199812

ED Entered STN: 19990115

Last Updated on STN: 19990115

Entered Medline: 19981216

AB The present paper describes the total chemical synthesis of the precursor molecule of the Aequorea green fluorescent protein (GFP). The molecule is made up of 238 amino acid residues in a single polypeptide chain and is nonfluorescent. To carry out the synthesis, a procedure, first described in 1981 for the synthesis of complex peptides, was used. The procedure is based on performing segment condensation reactions in solution while providing maximum protection to the segment. The effectiveness of the procedure has been demonstrated by the synthesis of various biologically active peptides and small proteins, such as human angiogenin, a 123-residue protein analogue of ribonuclease A, human midkine, a 121-residue protein, and pleiotrophin, a 136-residue protein analogue of midkine. The GFP precursor molecule was synthesized from 26 fully protected segments in solution, and the final 238-residue peptide was treated with anhydrous hydrogen fluoride to obtain the precursor molecule of GFP containing two Cys(acetamidomethyl) residues. After removal of the acetamidomethyl groups, the product was dissolved in 0.1 M Tris. HCl buffer (pH 8.0) in the presence of DTT. After several hours at room temperature, the solution began to emit a green fluorescence (lambda_{max} = 509 nm) under near-UV light. Both fluorescence excitation and

fluorescence emission spectra were measured and were found to have the same shape and maxima as those reported for native GFP. The present results demonstrate the utility of the segment condensation procedure in synthesizing large protein molecules such as GFP. The result also provides evidence that the formation of the chromophore in GFP is not dependent on any external cofactor.

CT Check Tags: Human

Amino Acid Sequence

Animals

Fluorescence

*Luminescent Proteins: CH, chemistry

Molecular Sequence Data

*Protein Folding

*Protein Precursors: CS, chemical synthesis

*Protein Precursors: CH, chemistry

Scyphozoa

RN 147336-22-9 (green fluorescent protein)

CN 0 (Luminescent Proteins); 0 (Protein Precursors)

L109 ANSWER 6 OF 21 MEDLINE on STN

AN 1998389230 MEDLINE

DN PubMed ID: 9723837

TI Modification of sticholysin II hemolytic activity by free radicals.

AU Pazos I F; Alvarez C; Lanio M E; Martinez D; Morera V; Lissi E A; Campos A M

CS Department of Biochemistry, Faculty of Biology, University of Havana, Cuba.

SO Toxicon : official journal of the International Society on Toxinology, (1998 Oct) 36 (10) 1383-93.

Journal code: 1307333. ISSN: 0041-0101.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199811

ED Entered STN: 19990106

Last Updated on STN: 19990106

Entered Medline: 19981105

AB Sticholysin II is a highly hemolytic toxin present in the caribbean sea anemone Stichodactyla helianthus. Pre-incubation of St II with 2,2'-azobis(2-amidinopropane), a source of peroxy radicals in air saturated solution, readily reduces its hemolytic activity. Analysis of the amino acids present in the protein after its modification shows that only tryptophan groups are significantly modified by the free radicals. According to this, the loss of hemolytic activity correlates with the loss of the protein intrinsic fluorescence. The results indicate that, at high toxin concentrations, nearly a tryptophan residue and 0.2 toxin molecules are inactivated by each radical introduced into the system. Association of St II to multilamellar liposomes (egg yolk phosphatidyl choline:sphingomyelin 1:1) increases the toxin intrinsic fluorescence, indicating a more hydrophobic average environment of the five tryptophan groups of the protein. In agreement with this, incorporation of St II to the liposomes reduces the rate of fluorescence loss during its modification by free radicals, particularly at long incubation times. These results are explained in terms of two populations of tryptophans that are quenched at different rates by acrylamide and whose rates of inactivation by free radicals are also different.

CT Check Tags: Human; Support, Non-U.S. Gov't

Acrylamide: TO, toxicity

*Amidines: PD, pharmacology

Animals

Cnidarian Venoms: CH, chemistry

*Cnidarian Venoms: TO, toxicity

Erythrocytes: DE, drug effects

Fluorescence

Free Radicals

Hemolysins: CH, chemistry

*Hemolysins: DE, drug effects

*Oxidants: PD, pharmacology

***Sea Anemones**

*Sialyltransferases: PD, pharmacology

Tryptophan: CH, chemistry

RN 13217-66-8 (2,2'-azobis(2-amidinopropane)); 73-22-3 (Tryptophan); 79-06-1 (Acrylamide)

CN 0 (Amidines); 0 (Cnidarian Venoms); 0 (Free Radicals); 0 (Hemolysins); 0 (Oxidants); EC 2.4.99.- (Sialyltransferases); EC 2.4.99.8 (CMP-acetylneuraminate-alpha-N-acetylneuramide alpha-2,8-sialyltransferase)

L109 ANSWER 7 OF 21 MEDLINE on STN

AN 1998044660 MEDLINE

DN PubMed ID: 9383412

TI Proteins that glow in green and blue.

AU Coxon A; Bestor T H

CS Department of Pathology, Brigham and Women's Hospital, Boston, MA, USA.

NC CA60610 (NCI)

GM00616 (NIGMS)

SO Chemistry & biology, (1995 Mar) 2 (3) 119-21. Ref: 27

Journal code: 9500160. ISSN: 1074-5521.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

(REVIEW, TUTORIAL)

LA English

FS Priority Journals

EM 199801

ED Entered STN: 19980129

Last Updated on STN: 19980129

Entered Medline: 19980114

AB An intrinsically fluorescent protein from a Pacific jellyfish promises to become an important power tool in experimental biology. Mutant forms of this green fluorescent protein with altered spectral characteristics have recently been constructed. It is now possible to envision a range of derivatives optimized for specific applications.

CT Check Tags: Support, U.S. Gov't, P.H.S.

Aequorin: CH, chemistry

Aequorin: ME, metabolism

Animals

Fluorescence

***Luminescent Proteins: CH, chemistry**

Luminescent Proteins: DU, diagnostic use

Luminescent Proteins: GE, genetics

***Scyphozoa: ME, metabolism**

RN 147336-22-9 (green fluorescent protein); 50934-79-7 (Aequorin)

CN 0 (Luminescent Proteins)

L109 ANSWER 8 OF 21 MEDLINE on STN

AN 1998019228 MEDLINE

DN PubMed ID: 9353317

TI Deletions of the Aequorea victoria green fluorescent protein define the minimal domain required for fluorescence.

AU Li X; Zhang G; Ngo N; Zhao X; Kain S R; Huang C C

CS CLONTECH Laboratories, Inc., 1020 East Meadow Circle, Palo Alto, CA 94303, USA.. xqli@CLONTECH.com

SO Journal of biological chemistry, (1997 Nov 7) 272 (45) 28545-9.

Journal code: 2985121R. ISSN: 0021-9258.

CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199712
ED Entered STN: 19980109
Last Updated on STN: 19980109
Entered Medline: 19971212

AB The Green Fluorescent Protein (GFP) from the jellyfish *Aequorea victoria* is a widely used marker for gene expression and protein localization studies. Dissection of the structure of the protein would be expected to shed light on its potential applications to other fields such as the detection of protease activity. Using deletion analysis, we have defined the minimal domain in GFP required for fluorescence to amino acids 7-229. This domain starts at the middle of the first small alpha helix at the N terminus of GFP and ends immediately following the last beta sheet. Studies of the amino acids at both termini of the minimal domain revealed that positions 6 and 7 at the N terminus are Glu-specific. Change of the Glu residues to other amino acids results in reduction of GFP fluorescence. Position 229 at the C terminus of GFP, however, is nonspecific: the Ile can be replaced with other amino acids with no measurable loss of fluorescence. A total of only 15 terminal amino acids can be deleted from GFP without disrupting fluorescence, consistent with findings of a previous study of GFP crystal structure (Ormo, M., Cubitt, A. B., Kallio, K., Gross, L. A., Tsien, R. Y., Remington, S. J. (1996) *Science* 273, 1392-1395 and Yang, F., Moss, L. G., and Phillips, G. N., Jr. (1996) *Nat. Biotechnol.* 14, 1246-1251) that a tightly packed structure exists in the protein. We also generated internal deletions within the loop regions of GFP according to its crystal structure and found that all such deletions eliminated GFP fluorescence.

CT Animals
Binding Sites
CHO Cells
Flow Cytometry
Fluorescence
Glutamic Acid: GE, genetics
Glutamic Acid: ME, metabolism
Hamsters
Isoleucine: GE, genetics
Isoleucine: ME, metabolism
Luminescent Proteins: CH, chemistry
*Luminescent Proteins: GE, genetics
Scyphozoa
Sequence Deletion
Transfection

RN 147336-22-9 (green fluorescent protein); 56-86-0 (Glutamic Acid); 73-32-5 (Isoleucine)

CN 0 (Luminescent Proteins)

L109 ANSWER 9 OF 21 MEDLINE on STN
AN 97401158 MEDLINE
DN PubMed ID: 9256997
TI Detection of *Aequorea victoria* green fluorescent protein by capillary electrophoresis laser induced fluorescence detection.
AU Craig D B; Wong J C; Dovichi N J
CS Department of Chemistry, University of Alberta, Edmonton, Canada.
SO Biomedical chromatography : BMC, (1997 Jul-Aug) 11 (4) 205-6.
Journal code: 8610241. ISSN: 0269-3879.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199710

ED Entered STN: 19971021
Last Updated on STN: 19971021
Entered Medline: 19971009

AB Aequorea victoria green fluorescent protein was assayed by capillary electrophoresis using post-capillary laser-induced fluorescence detection in a sheath flow cuvette. The limit of detection was 3.0×10^{-12} M protein in an injection volume of 17 nL, corresponding to a mass of 3100 molecules.

CT Check Tags: Support, Non-U.S. Gov't
Animals
*Electrophoresis, Capillary: MT, methods
Fluorescence
Lasers
*Luminescent Proteins: AN, analysis
Scyphozoa: CH, chemistry

RN 147336-22-9 (green fluorescent protein)
CN 0 (Luminescent Proteins)

L109 ANSWER 10 OF 21 MEDLINE on STN
AN 97379430 MEDLINE
DN PubMed ID: 9237752
TI On/off blinking and switching behaviour of single molecules of green fluorescent protein.
AU Dickson R M; Cubitt A B; Tsien R Y; Moerner W E
CS Department of Chemistry and Biochemistry, University of California San Diego, La Jolla 92093-0340, USA.
SO Nature, (1997 Jul 24) 388 (6640) 355-8.
Journal code: 0410462. ISSN: 0028-0836.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199708
ED Entered STN: 19970825
Last Updated on STN: 19980206
Entered Medline: 19970812

AB Optical studies of individual molecules at low and room temperature can provide information about the dynamics of local environments in solids, liquids and biological systems unobscured by ensemble averaging. Here we present a study of the photophysical behaviour of single molecules of the green fluorescent protein (GFP) derived from the jellyfish Aequorea victoria. Wild-type GFP and its mutant have attracted interest as fluorescent biological labels because the fluorophore may be formed in vivo. GFP mutants immobilized in aerated aqueous polymer gels and excited by 488-nm light undergo repeated cycles of fluorescent emission ('blinking') on a timescale of several seconds-behaviour that would be unobservable in bulk studies. Eventually the individual GFP molecules reach a long-lasting dark state, from which they can be switched back to the original emissive state by irradiation at 405 nm. This suggests the possibility of using these GFPs as fluorescent markers for time-dependent cell processes, and as molecular photonic switches or optical storage elements, addressable on the single-molecule level.

CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
Animals
Escherichia coli
Fluorescence
*Luminescent Proteins: CH, chemistry
Luminescent Proteins: GE, genetics
Mutation
Photochemistry
Recombinant Fusion Proteins: CH, chemistry
Recombinant Fusion Proteins: GE, genetics
Scyphozoa

RN 147336-22-9 (green fluorescent protein)
 CN 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)

L109 ANSWER 11 OF 21 MEDLINE on STN
 AN 97327494 MEDLINE
 DN PubMed ID: 9184161
 TI Chromophore formation in green fluorescent protein.
 AU Reid B G; Flynn G C
 CS Institute of Molecular Biology and Department of Chemistry, University of Oregon, Eugene 97403, USA.
 SO Biochemistry, (1997 Jun 3) 36 (22) 6786-91.
 Journal code: 0370623. ISSN: 0006-2960.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199707
 ED Entered STN: 19970721
 Last Updated on STN: 19980206
 Entered Medline: 19970703

AB The green fluorescent protein (GFP) from the jellyfish *Aequorea Victoria* forms an intrinsic chromophore through cyclization and oxidation of an internal tripeptide motif [Prasher, D. C., et al. (1992) *Gene* 111, 229-233; Cody, C. E., et al. (1993) *Biochemistry* 32, 1212-1218]. We monitored the formation of the chromophore in vitro using the S65T-GFP chromophore mutant. S65T-GFP recovered from inclusion bodies in *Escherichia coli* lacks the mature chromophore, suggesting that protein destined for inclusion bodies aggregated prior to productive folding. This material was used to follow the steps leading to chromophore formation. The process of chromophore formation in S65T-GFP was determined to be an ordered reaction consisting of three distinct kinetic steps. Protein folding occurs fairly slowly ($k(f) = 2.44 \times 10^{-3} \text{ s}^{-1}$) and prior to any chromophore modification. Next, an intermediate step occurs that includes, but is not necessarily limited to, cyclization of the tripeptide chromophore motif ($k(c) = 3.8 \times 10^{-3} \text{ s}^{-1}$). The final and slow step ($k(ox) = 1.51 \times 10^{-4} \text{ s}^{-1}$) in chromophore formation involves oxidation of the cyclized chromophore. Since the chromophore forms de novo from purified denatured protein and is a first-order process, we conclude that GFP chromophore formation is an autocatalytic process.

CT Animals
 Cyclization
Escherichia coli: UL, ultrastructure
 Inclusion Bodies: CH, chemistry
 Kinetics
 *Luminescent Proteins: CH, chemistry
 Oxidation-Reduction
 *Pigments: CH, chemistry
 Protein Denaturation
 Protein Folding
 Scyphozoa: CH, chemistry
 Spectrometry, Fluorescence

RN 147336-22-9 (green fluorescent protein)
 CN 0 (Luminescent Proteins); 0 (Pigments)

L109 ANSWER 12 OF 21 MEDLINE on STN
 AN 97318938 MEDLINE
 DN PubMed ID: 9175875
 TI 'Green mice' as a source of ubiquitous green cells.
 AU Okabe M; Ikawa M; Kominami K; Nakanishi T; Nishimune Y
 CS Research Institute for Microbial Diseases, Osaka University, Suita, Japan.. okabe@biken.osaka-u.ac.jp
 SO FEBS letters, (1997 May 5) 407 (3) 313-9.

Journal code: 0155157. ISSN: 0014-5793.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199707

ED Entered STN: 19970716
Last Updated on STN: 19980206
Entered Medline: 19970701

AB The green fluorescent protein (GFP) is responsible for the green bioluminescence of the jellyfish *Aequorea victoria*. Many classes of GFP mutants exist that display modified fluorescence spectra and an increased extinction coefficient. We produced transgenic mouse lines with an 'enhanced' GFP (EGFP) cDNA under the control of a chicken beta-actin promoter and cytomegalovirus enhancer. All of the tissues from these transgenic lines, with the exception of erythrocytes and hair, were green under excitation light. The fluorescent nature of the cells from these transgenic mouse lines would facilitate their use in many kinds of cell transplantation experiments.

CT Check Tags: Female; Male

Actins: GE, genetics

Animals

Cell Separation

Cell Transplantation

Chickens

Cytomegalovirus: GE, genetics

Enhancer Elements (Genetics)

Flow Cytometry

Fluorescence

Genes, Reporter

***Luminescent Proteins: GE, genetics**

Luminescent Proteins: ME, metabolism

Mice

*Mice, Transgenic: AH, anatomy & histology

*Mice, Transgenic: GE, genetics

Pregnancy

Promoter Regions (Genetics)

Scyphozoa: GE, genetics

Tissue Distribution

RN 147336-22-9 (green fluorescent protein)

CN 0 (Actins); 0 (Luminescent Proteins)

L109 ANSWER 13 OF 21 MEDLINE on STN

AN 97148198 MEDLINE

DN PubMed ID: 8994830

TI Mutations that suppress the thermosensitivity of green fluorescent protein.

AU Siemering K R; Golbik R; Sever R; Haseloff J

CS MRC Laboratory of Molecular Biology, Cambridge, UK.

SO Current biology : CB, (1996 Dec 1) 6 (12) 1653-63.

Journal code: 9107782. ISSN: 0960-9822.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS GENBANK-U87973; GENBANK-U87974

EM 199702

ED Entered STN: 19970306
Last Updated on STN: 19980206
Entered Medline: 19970227

AB BACKGROUND: The green fluorescent protein (GFP) of the jellyfish *Aequorea victoria* has recently attracted great interest as the first example of a cloned reporter protein that is intrinsically fluorescent. Although

successful in some organisms, heterologous expression of GFP has not always been straight forward. In particular, expression of GFP in cells that require incubation temperatures around 37 degrees C has been problematic. RESULTS: We have carried out a screen for mutant forms of GFP that fluoresce more intensely than the wild-type protein when expressed in E. coli at 37 degrees C. We have characterized a bright mutant (GFPA) with reduced sensitivity to temperature in both bacteria and yeast, and have shown that the amino acids substituted in GFPA act by preventing temperature-dependent misfolding of the GFP apoprotein. We have shown that the excitation and emission spectra of GFPA can be manipulated by site-directed mutagenesis without disturbing its improved folding characteristics, and have produced a thermostable folding mutant (GFP5) that can be efficiently excited using either long-wavelength ultraviolet or blue light. Expression of GFP5 results in greatly improved levels of fluorescence in both microbial and mammalian cells cultured at 37 degrees C. CONCLUSIONS: The thermotolerant mutants of GFP greatly improve the sensitivity of the protein as a visible reporter molecule in bacterial, yeast and mammalian cells. The fluorescence spectra of these mutants can be manipulated by further mutagenesis without deleteriously affecting their improved folding characteristics, so it may be possible to engineer a range of spectral variants with improved tolerance to temperature. Such a range of sensitive reporter proteins will greatly improve the prospects for GFP-based applications in cells that require relatively high incubation temperatures.

CT Check Tags: Support, Non-U.S. Gov't

Amino Acid Sequence

Animals

Apoproteins: CH, chemistry

Apoproteins: ME, metabolism

Base Sequence

COS Cells

DNA

Escherichia coli: ME, metabolism

Fluorescence

***Gene Expression**

Luminescent Proteins: CH, chemistry

***Luminescent Proteins:** GE, genetics

Luminescent Proteins: ME, metabolism

Molecular Sequence Data

Mutagenesis, Site-Directed

Oxidation-Reduction

Protein Folding

Recombinant Fusion Proteins: CH, chemistry

Recombinant Fusion Proteins: GE, genetics

Recombinant Fusion Proteins: ME, metabolism

Saccharomyces cerevisiae: ME, metabolism

Scyphozoa

Spectrometry, Fluorescence

Temperature

RN 147336-22-9 (green fluorescent protein); 9007-49-2 (DNA)

CN 0 (Apoproteins); 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)

L109 ANSWER 14 OF 21 MEDLINE on STN

AN 97105906 MEDLINE

DN PubMed ID: 8948654

TI Optimized codon usage and chromophore mutations provide enhanced sensitivity with the green fluorescent protein.

AU Yang T T; Cheng L; Kain S R

CS Cell Biology Group, CLONTECH Laboratories Inc., Palo Alto, CA 94303-4230, USA.

SO Nucleic acids research, (1996 Nov 15) 24 (22) 4592-3.

Journal code: 0411011. ISSN: 0305-1048.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199701
ED Entered STN: 19970219
Last Updated on STN: 19980206
Entered Medline: 19970117

AB The green fluorescent protein (GFP) from *Aequorea victoria* is a versatile reporter protein for monitoring gene expression and protein localization in a variety of cells and organisms. Despite many early successes using this reporter, wild type GFP is suboptimal for most applications due to low fluorescence intensity when excited by blue light (488 nm), a significant lag in the development of fluorescence after protein synthesis, complex photoisomerization of the GFP chromophore and poor expression in many higher eukaryotes. To improve upon these qualities, we have combined a mutant of GFP with a significantly larger extinction coefficient for excitation at 488 nm with a re-engineered GFP gene sequence containing codons preferentially found in highly expressed human proteins. The combination of improved fluorescence intensity and higher expression levels yield an enhanced GFP which provides greater sensitivity in most systems.

CT Check Tags: Human
Animals
CHO Cells
Cell Line
*Codon
Flow Cytometry
Fluorescence
Hamsters
*Luminescent Proteins: GE, genetics
Scyphozoa

RN 147336-22-9 (green fluorescent protein)
CN 0 (Codon); 0 (Luminescent Proteins)

L109 ANSWER 15 OF 21 MEDLINE on STN
AN 96305138 MEDLINE
DN PubMed ID: 8707054
TI Deletion mapping of the *Aequorea victoria* green fluorescent protein.
AU Dopf J; Horiagon T M
CS Molecular Vaccine Laboratory, Human Gene Therapy Research Institute, Des Moines, IA 50309, USA.
SO Gene, (1996) 173 (1 Spec No) 39-44.
Journal code: 7706761. ISSN: 0378-1119.
CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-M62653
EM 199609
ED Entered STN: 19960919
Last Updated on STN: 19980206
Entered Medline: 19960911

AB *Aequorea victoria* green fluorescent protein (GFP) is a promising fluorescent marker which is active in a diverse array of prokaryotic and eukaryotic organisms. A key feature underlying the versatility of GFP is its capacity to undergo heterocyclic chromophore formation by cyclization of a tripeptide present in its primary sequence and thereby acquiring fluorescent activity in a variety of intracellular environments. In order to define further the primary structure requirements for chromophore formation and fluorescence in GFP, a series of N- and C-terminal GFP deletion variant expression vectors were created using the polymerase chain reaction. Scanning spectrofluorometric analyses of crude soluble protein extracts derived from eleven GFP expression constructs revealed

that amino acid (aa) residues 2-232, of a total of 238 aa in the native protein, were required for the characteristic emission and absorption spectra of native GFP. Heterocyclic chromophore formation was assayed by comparing the absorption spectrum of GFP deletion variants over the 300-500-nm range to the absorption spectra of full-length GFP and GFP deletion variants missing the chromophore substrate domain from the primary sequence. GFP deletion variants lacking fluorescent activity showed no evidence of heterocyclic ring structure formation when the soluble extracts of their bacterial expression hosts were studied at pH 7.9. These observations suggest that the primary structure requirements for the fluorescent activity of GFP are relatively extensive and are compatible with the view that much of the primary structure serves an autocatalytic function.

CT **Amino Acid Sequence**

Animals

Base Sequence

Binding Sites

Cloning, Molecular

Electrophoresis, Polyacrylamide Gel

Fluorescence

Genetic Vectors

***Luminescent Proteins: CH, chemistry**

Luminescent Proteins: GE, genetics

Molecular Sequence Data

Oligodeoxyribonucleotides

Scyphozoa

Sequence Deletion

Spectrometry, Fluorescence

RN 147336-22-9 (green fluorescent protein)

CN 0 (Genetic Vectors); 0 (Luminescent Proteins); 0
(Oligodeoxyribonucleotides)

L109 ANSWER 16 OF 21 MEDLINE on STN

AN 95268500 MEDLINE

DN PubMed ID: 7749464

TI Induction of 70-kD heat shock protein in scleractinian corals by elevated temperature: significance for coral bleaching.

AU Hayes R L; King C M

CS Department of Anatomy, Howard University, Washington, D.C. 20059, USA.

SO Molecular marine biology and biotechnology, (1995 Mar) 4 (1)
36-42.

Journal code: 9205135. ISSN: 1053-6426.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199506

ED Entered STN: 19950629

Last Updated on STN: 19950629

Entered Medline: 19950622

AB In this study, the induction of the 70-kD family of heat shock proteins (hsp70) has been examined in stony coral tissues. In these experiments, the only difference from control conditions has been exposure to a temperature approximating that at which field bleaching in the Caribbean is known to occur, approximately 30 degrees C or 1 degree-2 degrees C above long-term average seasonal maximum temperatures. A constitutive hsp70 has been identified both in the zooxanthellate (hermatypic) coral, *Montastrea annularis*, and in two corals lacking symbiotic algae, *Tubastrea cocchineae* and *Astrangia danae* (Cnidaria, Anthozoa, Scleractinia). Western blots of experimental tissues fractionated by polyacrylamide gel electrophoresis indicate that the initial induction of hsp70 occurs rapidly, within one hour of transfer to water of elevated temperature. Thereafter, the level of hsp70 decreases within 12-24 hours to

approximately the constitutive level. In field-bleached specimens of *M. annularis*, hsp70 is not detected. Since this coral tissue, once bleached to whiteness, contains no 70-kD heat shock protein, we conclude that the process of coral bleaching might include, among other metabolic alterations, a failed heat shock response. In addition to being compromised in other normal functions, the bleached coral would lose the capacity to protect itself against environmental stress. The eventual loss of algae by bleached coral is likely to be consequent to several metabolic changes in the coral tissue. However, the uncoupling of that symbiotic relation is not concomitant with the initial stress response of heat shock protein synthesis.

CT Animals
Blotting, Western
*Cnidaria: ME, metabolism
Electrophoresis, Polyacrylamide Gel
Heat
*Heat-Shock Proteins 70: BI, biosynthesis
*Pigmentation
CN 0 (Heat-Shock Proteins 70)

L109 ANSWER 17 OF 21 MEDLINE on STN
AN 94364470 MEDLINE
DN PubMed ID: 8082767
TI Evidence for redox forms of the Aequorea green fluorescent protein.
AU Inouye S; Tsuji F I
CS Marine Biology Research Division, University of California at San Diego, La Jolla 92093.
SO FEBS letters, (1994 Sep 5) 351 (2) 211-4.
Journal code: 0155157. ISSN: 0014-5793.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-L29345
EM 199410
ED Entered STN: 19941021
Last Updated on STN: 19980206
Entered Medline: 19941010
AB Highly purified recombinant Aequorea green fluorescent protein is able to undergo a reversible oxidation-reduction reaction in the presence of molecular oxygen. In the oxidized form in near UV light, the protein is highly fluorescent, but when reduced with sodium dithionite, it becomes completely non-fluorescent. On exposure to molecular oxygen the reduced, non-fluorescent protein reverts to its original fluorescent state.
CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
Amino Acid Sequence
Animals
Base Sequence
Fluorescence
*Luminescent Proteins: CH, chemistry
Luminescent Proteins: GE, genetics
Luminescent Proteins: ME, metabolism
Molecular Sequence Data
Oxidation-Reduction
Oxygen: ME, metabolism
Recombinant Fusion Proteins: CH, chemistry
*Scyphozoa: CH, chemistry
Scyphozoa: ME, metabolism
Spectrometry, Fluorescence
Spectrophotometry
RN 147336-22-9 (green fluorescent protein); 7782-44-7 (Oxygen)
CN 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)

L109 ANSWER 18 OF 21 MEDLINE on STN
 AN 94185810 MEDLINE
 DN PubMed ID: 8137953
 TI Aequorea green fluorescent protein. Expression of the gene and fluorescence characteristics of the recombinant protein.
 AU Inouye S; Tsuji F I
 CS Marine Biology Research Division, Scripps Institution of Oceanography, University of California at San Diego, La Jolla 92093.
 SO FEBS letters, (1994 Mar 21) 341 (2-3) 277-80.
 Journal code: 0155157. ISSN: 0014-5793.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 OS GENBANK-L29345
 EM 199404
 ED Entered STN: 19940509
 Last Updated on STN: 19980206
 Entered Medline: 19940426
 AB Expression of the cDNA for Aequorea green fluorescent protein in E. coli yielded a fused protein with fluorescence excitation and emission spectra virtually identical to those of the native green fluorescent protein. Further, a solution of the protein, when mixed with aequorin and calcium ion, emitted a greenish luminescence characteristic of the in vivo luminescence of the animal, indicating a radiationless energy transfer to the protein.
 CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
 Amino Acid Sequence
 Animals
 Base Sequence
 DNA, Complementary
 Fluorescence
 Luminescent Proteins: CH, chemistry
 ***Luminescent Proteins: GE, genetics**
 Molecular Sequence Data
 Recombinant Proteins: CH, chemistry
 Recombinant Proteins: GE, genetics
 ***Scyphozoa: GE, genetics**
 Sequence Alignment
 RN 147336-22-9 (green fluorescent protein)
 CN 0 (DNA, Complementary); 0 (Luminescent Proteins); 0 (Recombinant Proteins)

L109 ANSWER 19 OF 21 MEDLINE on STN
 AN 88237947 MEDLINE
 DN PubMed ID: 2454001
 TI Phytophotodermatitis mimicking jellyfish envenomation.
 AU Burnett J W; Horn T D; Mercado F; Niebyl P H
 CS Department of Medicine, University of Maryland School of Medicine, Baltimore.
 SO Acta dermato-venereologica, (1988) 68 (2) 168-71.
 Journal code: 0370310. ISSN: 0001-5555.
 CY Sweden
 DT (CASE REPORTS)
 Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 198807
 ED Entered STN: 19900308
 Last Updated on STN: 19980206
 Entered Medline: 19880701
 AB Two cases of citrus juice phytophotodermatoses with long **hyperpigmented** macular lesions are reported. These lesions simulated those resulting from jellyfish envenomation. The diagnosis can

be established by the lack of local pain or signs of envenomation, and the absence of a serological response to jellyfish venom.

CT Check Tags: Female; Human
 Adolescent
 Adult
 Animals
 Citrus
 *Cnidarian Venoms: AE, adverse effects
 Cnidarian Venoms: IM, immunology
 Diagnosis, Differential
Immunoglobulin G: AN, analysis
 Photosensitivity Disorders: BL, blood
 *Photosensitivity Disorders: DI, diagnosis
 Photosensitivity Disorders: ET, etiology
Scyphozoa
 CN 0 (Cnidarian Venoms); 0 (Immunoglobulin G)

L109 ANSWER 20 OF 21 MEDLINE on STN

AN 88227972 MEDLINE

DN PubMed ID: 2897362

TI X-ray diffraction and time-resolved fluorescence analyses of Aequorea green fluorescent protein crystals.

AU Perozzo M A; Ward K B; Thompson R B; Ward W W

CS Laboratory for the Structure of Matter, Naval Research Laboratory, Washington, D.C. 20375-5000.

SO Journal of biological chemistry, (1988 Jun 5) 263 (16) 7713-6.

Journal code: 2985121R. ISSN: 0021-9258.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 198806

ED Entered STN: 19900308

Last Updated on STN: 19950206

Entered Medline: 19880629

AB The energy transfer protein, green fluorescent protein, from the hydromedusan jellyfish Aequorea victoria has been crystallized in two morphologies suitable for x-ray diffraction analysis. Hexagonal plates have been obtained in the P6122 or P6522 space group with $a = b = 77.5$, $c = 370$ A, and no more than three molecules per asymmetric unit. Monoclinic parallel-epipeds have been obtained in the C2 space group with $a = 93.3$, $b = 66.5$, $c = 45.5$ A, $\beta = 108$ degrees, and one molecule per asymmetric unit. The monoclinic form is better suited for use in a structure determination, and a data set was collected from the native crystal. Time-resolved fluorescence measurements of large single crystals are possible due to the unique, covalently bound chromophore present in this molecule. Fluorescence emission spectra of Aequorea green fluorescent protein in solution and from either the hexagonal or monoclinic single crystal show similar profiles suggesting that the conformations of protein in solution and in the crystal are similar. Multifrequency phase fluorimetric data obtained from a single crystal were best fit by a single fluorescence lifetime very close to that exhibited by the protein in solution. The complementary structural data obtained from fluorescence spectroscopy and x-ray diffraction crystallography will aid in the elucidation of this novel protein's structure-function relationship.

CT Check Tags: Support, U.S. Gov't, Non-P.H.S.

***Aequorin: AN, analysis**

Animals

***Cnidaria**

Crystallization

Fluorescence

***Luminescent Proteins: AN, analysis**

***Scyphozoa**

X-Ray Diffraction

RN 50934-79-7 (Aequorin)
 CN 0 (Luminescent Proteins)

L109 ANSWER 21 OF 21 MEDLINE on STN
 AN 75208539 MEDLINE
 DN PubMed ID: 238805
 TI Bioluminescence: from chemical bonds to photons.
 AU Hastings J W
 SO Ciba Foundation symposium, (1975) (31) 125-46.
 Journal code: 0356636. ISSN: 0300-5208.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 197511
 ED Entered STN: 19900310
 Last Updated on STN: 19980206
 Entered Medline: 19751105
 AB The biological transformation of chemical to photic energy involves an enzyme-mediated chemiluminescent reaction, in which one of the products exists in an electronically excited state, emitting a photon as it returns to the ground state. The colour of bioluminescence differs in different organisms, ranging from the deep blue (460 nm) of certain crustacea, through the bluish green (490 nm) of some bacteria, the green (530 nm) of mushrooms to the red (about 600 nm) of the railroad worm. In one case, energy transfer has been demonstrated from the enzyme system to material that emits light with a longer wavelength. The energies involved range from about 165 to 250 kJ/einstein (40 to 60 kcal/einstein). Boyle first showed that air was involved in bioluminescence in 1668 in his experiments with an air pump. Over the past 100 years, it has become clear that most if not all bioluminescent systems require molecular oxygen. The recent isolation and characterization of an oxygen-containing (peroxide) enzyme intermediate from the bacterial system is described and a reaction mechanism is postulated. This scheme is compared with other hypothetical mechanisms, in particular those involving a four-membered ring intermediate, a dioxetane, in which the simultaneous cleavage of two bonds leaves one product in an excited state. I shall discuss the special role of luciferases in bioluminescence, especially in flashing mechanisms involving 'precharged' intermediates.
 CT Check Tags: Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
 Acridines: ME, metabolism
 Animals
 Annelida: ME, metabolism
 Chromatography, Gel
Cnidaria: ME, metabolism
 Crustacea: ME, metabolism
 Diptera: ME, metabolism
 Energy Transfer
 Fishes: ME, metabolism
Flavoproteins: IP, isolation & purification
Fluorescence
 Fungi: ME, metabolism
 Luciferase: ME, metabolism
 Luciferins: ME, metabolism
 *Luminescence
 Models, Biological
 Models, Chemical
 Oxidation-Reduction
 Oxygen: ME, metabolism
 Photobacterium: ME, metabolism
 Spectrum Analysis
 Temperature

RN 7782-44-7 (Oxygen)
 CN 0 (Acridines); 0 (Flavoproteins); 0 (Luciferins); EC 1.13.12.-
 (Luciferase)

L109 ANSWER 1 OF 21 MEDLINE on STN
 AN 1999322087 MEDLINE
 DN PubMed ID: 10390501
 TI Evaluation of transcriptional fusions with green fluorescent protein
 versus luciferase as reporters in bacterial mutagenicity tests.
 AU Justus T; Thomas S M
 CS School of Biological Sciences, The Flinders University of South Australia,
 GPO Box 2100, Adelaide, SA 5001, Australia.
 SO Mutagenesis, (1999 Jul) 14 (4) 351-6.
 Journal code: 8707812. ISSN: 0267-8357.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199909
 ED Entered STN: 19990913
 Last Updated on STN: 19990913
 Entered Medline: 19990902

AB A bacterial plasmid was constructed on which the regulatory region of the
 umuC gene of Escherichia coli was fused to the coding sequence of the
 green fluorescent protein gene (gfp) from the jellyfish Aequorea victoria.
 Escherichia coli AB1157 strains carrying the plasmid emitted fluorescence
 in the presence of mutagens that induce the SOS DNA repair system. Data
 on tests with nitrosoguanidine, methylmethane sulphonate and UV radiation
 (254 nm) are presented. Although fluorescent detection using this system
 was not as rapid or sensitive as a similar luminescent equivalent
 (umuC-luxAB), the gfp reporter system was more robust. Escherichia coli
 umu gene induction was also analysed in Salmonella typhimurium TA1537
 cells following plasmid transfer and exposure to the same range of
 mutagens. There was no significant difference in sensitivity between the
 two species. These preliminary results will provide the basis for
 development of mutagenicity test systems useful in the testing of complex
 mixtures, such as environmental samples, and the investigation of
 physiological parameters influencing spontaneous mutagenesis in bacteria.

CT Check Tags: Comparative Study; Support, Non-U.S. Gov't
 Animals
 Bacteria: DE, drug effects
 *Bacteria: GE, genetics
 Bacteria: GD, growth & development
 Bacteria: RE, radiation effects
 *Bacterial Proteins: GE, genetics
 Escherichia coli: GE, genetics
 *Escherichia coli Proteins
 Fluorescence
 Gene Fusion
 Genes, Reporter: DE, drug effects
 *Genes, Reporter: GE, genetics
 Genes, Reporter: RE, radiation effects
 *Luciferase: CH, chemistry
 Luciferase: GE, genetics
 Luminescence
 *Luminescent Proteins: CH, chemistry
 Luminescent Proteins: GE, genetics
 Methyl Methanesulfonate: TO, toxicity
 *Mutagenicity Tests: MT, methods
 Mutagens: TO, toxicity
 Nitrosoguanidines: TO, toxicity
 SOS Response (Genetics): DE, drug effects
 *SOS Response (Genetics): GE, genetics

SOS Response (Genetics): RE, radiation effects
Salmonella typhimurium: GE, genetics

Scyphozoa

Ultraviolet Rays: AE, adverse effects

RN 147336-22-9 (green fluorescent protein); 66-27-3 (Methyl
Methanesulfonate); 98059-80-4 (UmuC mutagenesis protein, E coli)
CN 0 (Bacterial Proteins); 0 (Escherichia coli Proteins); 0 (Luminescent
Proteins); 0 (Mutagens); 0 (Nitrosoguanidines); EC 1.13.12.- (Luciferase)

L109 ANSWER 2 OF 21 MEDLINE on STN

AN 1999287105 MEDLINE

DN PubMed ID: 10360360

TI Three photoconvertible forms of green fluorescent protein identified by
spectral hole-burning.

CM Erratum in: Nat Struct Biol 1999 Jul;6(7):706

AU Creemers T M; Lock A J; Subramaniam V; Jovin T M; Volker S

CS Center for the Study of the Excited States of Molecules, Huygens and
Gorlaeus Laboratories, University of Leiden, The Netherlands.

SO Nature structural biology, (1999 Jun) 6 (6) 557-60.

Journal code: 9421566. ISSN: 1072-8368.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199906

ED Entered STN: 19990712

Last Updated on STN: 20000303

Entered Medline: 19990623

AB Several studies have led to the conclusion that, in the green fluorescent
protein (GFP) of the jellyfish Aequorea victoria, a photoconversion
involving excited-state proton transfer occurs from an A- to a B-form,
while an intermediate I-form was held responsible for the green
fluorescence. Here we have identified the I-form of wild-type GFP in
absorption, located the 0-0 transitions of all three forms A, B and I, and
determined vibrational frequencies of the ground and excited states. The
intrinsically narrow 0-0 transitions are revealed by the wavelengths at
which holes can be burnt. The pathways of photointerconversion are
unrevealed by excitation, emission and hole-burning spectroscopy. We
present an energy-level scheme that has significant implications for
GFP-mutants, which likewise can occur in the three photo-interconvertible
forms.

CT Check Tags: Support, Non-U.S. Gov't

Absorption

Animals

***Fluorescence**

Lasers

***Luminescent Proteins: CH, chemistry**

Luminescent Proteins: GE, genetics

***Luminescent Proteins: ME, metabolism**

Protein Conformation

Protons

Scyphozoa

Spectrum Analysis

Temperature

RN 147336-22-9 (green fluorescent protein)

CN 0 (Luminescent Proteins); 0 (Protons)

L109 ANSWER 3 OF 21 MEDLINE on STN

AN 1999238303 MEDLINE

DN PubMed ID: 10220315

TI Structural and spectral response of green fluorescent protein variants to
changes in pH.

AU Elsliger M A; Wachter R M; Hanson G T; Kallio K; Remington S J

CS Institute of Molecular Biology, Department of Physics, University of Oregon, Eugene 97403, USA.

NC 1 F32 GM19075-01 (NIGMS)

SO Biochemistry, (1999 Apr 27) 38 (17) 5296-301.
Journal code: 0370623. ISSN: 0006-2960.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS PDB-1EMG; PDB-BNL-26390

EM 199905

ED Entered STN: 19990601
Last Updated on STN: 19990601
Entered Medline: 19990514

AB The green fluorescent protein (GFP) from the jellyfish *Aequorea victoria* has become a useful tool in molecular and cell biology. Recently, it has been found that the fluorescence spectra of most mutants of GFP respond rapidly and reversibly to pH variations, making them useful as probes of intracellular pH. To explore the structural basis for the titration behavior of the popular GFP S65T variant, we determined high-resolution crystal structures at pH 8.0 and 4.6. The structures revealed changes in the hydrogen bond pattern with the chromophore, suggesting that the pH sensitivity derives from protonation of the chromophore phenolate. Mutations were designed in yellow fluorescent protein (S65G/V68L/S72A/T203Y) to change the solvent accessibility (H148G) and to modify polar groups (H148Q, E222Q) near the chromophore. pH titrations of these variants indicate that the chromophore pKa can be modulated over a broad range from 6 to 8, allowing for pH determination from pH 5 to pH 9. Finally, mutagenesis was used to raise the pKa from 6.0 (S65T) to 7.8 (S65T/H148D). Unlike other variants, S65T/H148D exhibits two pH-dependent excitation peaks for green fluorescence with a clean isosbestic point. This raises the interesting possibility of using fluorescence at this isosbestic point as an internal reference. Practical real time in vivo applications in cell and developmental biology are proposed.

CT Check Tags: Support, Non-U.S. Gov't; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
Amino Acid Substitution: GE, genetics
Animals
Crystallography, X-Ray
Glutamic Acid: GE, genetics
Histidine: GE, genetics
Hydrogen-Ion Concentration
Indicators and Reagents
*Luminescent Proteins: CH, chemistry
*Luminescent Proteins: GE, genetics
Mutagenesis, Site-Directed
Pigments: CH, chemistry
Pigments: GE, genetics
Protons
Scyphozoa
Serine: GE, genetics
Spectrometry, Fluorescence
Structure-Activity Relationship
Threonine: GE, genetics

RN 147336-22-9 (green fluorescent protein); 56-45-1 (Serine); 56-86-0 (Glutamic Acid); 71-00-1 (Histidine); 72-19-5 (Threonine)

CN 0 (Indicators and Reagents); 0 (Luminescent Proteins); 0 (Pigments); 0 (Protons)

L109 ANSWER 4 OF 21 MEDLINE on STN

AN 1999185010 MEDLINE

DN PubMed ID: 10085026

TI Examination of *Listeria monocytogenes* intracellular gene expression by

using the green fluorescent protein of *Aequorea victoria*.

AU Freitag N E; Jacobs K E
 CS Department of Immunology and Microbiology, Wayne State University School
 of Medicine, Detroit, Michigan, USA.. nfreitag@med.wayne.edu
 NC AI41816 (NIAID)
 SO Infection and immunity, (1999 Apr) 67 (4) 1844-52.
 Journal code: 0246127. ISSN: 0019-9567.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199904
 ED Entered STN: 19990511
 Last Updated on STN: 19990511
 Entered Medline: 19990426

AB The ActA protein of *Listeria monocytogenes* is an essential virulence
 factor and is required for intracellular bacterial motility and
 cell-to-cell spread. *plcB*, cotranscribed with *actA*, encodes a
 broad-specificity phospholipase C that contributes to lysis of host cell
 vacuoles and cell-to-cell spread. Construction of a transcriptional
 fusion between *actA-plcB* and the green fluorescent protein gene of
Aequorea victoria has facilitated the detailed examination of patterns of
actA/plcB expression within infected tissue culture cells. *actA/plcB*
 expression began approximately 30 min postinfection and was dependent upon
 entry of *L. monocytogenes* into the host cytosol. *L. monocytogenes*
Deltahly mutants, which are unable to escape from host cell vacuoles, did
 not express *actA/plcB* at detectable levels within infected tissue culture
 cells; however, complementation of the *hly* defect allowed entry of the
 bacteria into the host cytoplasm and subsequent *actA/plcB* expression.
 These results emphasize the ability of *L. monocytogenes* to sense the
 different host cell compartment environments encountered during the course
 of infection and to regulate virulence gene expression in response.

CT Check Tags: Support, U.S. Gov't, P.H.S.
 Animals
 *Bacterial Proteins: GE, genetics
 Cell Compartmentation
 Cell Line
 Chromosomes, Bacterial
 Fluorescence
 *Gene Expression Regulation, Bacterial
 Intracellular Fluid
 *Listeria monocytogenes: GE, genetics
 Listeria monocytogenes: GD, growth & development
 Luminescent Proteins: GE, genetics
 *Membrane Proteins: GE, genetics
 Mutagenesis
 *Phospholipase C: GE, genetics
 Recombinant Fusion Proteins: GE, genetics
 Scyphozoa
 Transcription, Genetic

RN 144430-05-7 (*actA* protein, *Listeria monocytogenes*); 147336-22-9 (green
 fluorescent protein)

CN 0 (Bacterial Proteins); 0 (Luminescent Proteins); 0 (Membrane Proteins); 0
 (Recombinant Fusion Proteins); EC 3.1.4.- (phosphatidylcholine-specific
 phospholipase C); EC 3.1.4.3 (Phospholipase C)

L109 ANSWER 5 OF 21 MEDLINE on STN
 AN 1999030606 MEDLINE
 DN PubMed ID: 9811837
 TI Chemical synthesis of the precursor molecule of the *Aequorea* green
 fluorescent protein, subsequent folding, and development of fluorescence.
 AU Nishiuchi Y; Inui T; Nishio H; Bodi J; Kimura T; Tsuji F I; Sakakibara S
 CS Peptide Institute, Protein Research Foundation, Minoh-shi, Osaka 562,

Japan.

SO Proceedings of the National Academy of Sciences of the United States of America, (1998 Nov 10) 95 (23) 13549-54.
Journal code: 7505876. ISSN: 0027-8424.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199812

ED Entered STN: 19990115
Last Updated on STN: 19990115
Entered Medline: 19981216

AB The present paper describes the total chemical synthesis of the precursor molecule of the Aequorea green fluorescent protein (GFP). The molecule is made up of 238 amino acid residues in a single polypeptide chain and is nonfluorescent. To carry out the synthesis, a procedure, first described in 1981 for the synthesis of complex peptides, was used. The procedure is based on performing segment condensation reactions in solution while providing maximum protection to the segment. The effectiveness of the procedure has been demonstrated by the synthesis of various biologically active peptides and small proteins, such as human angiogenin, a 123-residue protein analogue of ribonuclease A, human midkine, a 121-residue protein, and pleiotrophin, a 136-residue protein analogue of midkine. The GFP precursor molecule was synthesized from 26 fully protected segments in solution, and the final 238-residue peptide was treated with anhydrous hydrogen fluoride to obtain the precursor molecule of GFP containing two Cys(acetamidomethyl) residues. After removal of the acetamidomethyl groups, the product was dissolved in 0.1 M Tris. HCl buffer (pH 8.0) in the presence of DTT. After several hours at room temperature, the solution began to emit a green fluorescence (lambda_{max} = 509 nm) under near-UV light. Both fluorescence excitation and fluorescence emission spectra were measured and were found to have the same shape and maxima as those reported for native GFP. The present results demonstrate the utility of the segment condensation procedure in synthesizing large protein molecules such as GFP. The result also provides evidence that the formation of the chromophore in GFP is not dependent on any external cofactor.

CT Check Tags: Human
 Amino Acid Sequence
 Animals
 Fluorescence
 *Luminescent Proteins: CH, chemistry
 Molecular Sequence Data
 *Protein Folding
 *Protein Precursors: CS, chemical synthesis
 *Protein Precursors: CH, chemistry
 Scyphozoa

RN 147336-22-9 (green fluorescent protein)

CN 0 (Luminescent Proteins); 0 (Protein Precursors)

L109 ANSWER 6 OF 21 MEDLINE on STN

AN 1998389230 MEDLINE

DN PubMed ID: 9723837

TI Modification of sticholysin II hemolytic activity by free radicals.

AU Pazos I F; Alvarez C; Lanio M E; Martinez D; Morera V; Lissi E A; Campos A M

CS Department of Biochemistry, Faculty of Biology, University of Havana, Cuba.

SO Toxicon : official journal of the International Society on Toxinology, (1998 Oct) 36 (10) 1383-93.
Journal code: 1307333. ISSN: 0041-0101.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English
FS Priority Journals
EM 199811
ED Entered STN: 19990106
Last Updated on STN: 19990106
Entered Medline: 19981105
AB Sticholysin II is a highly hemolytic toxin present in the caribbean sea anemone Stichodactyla helianthus. Pre-incubation of St II with 2,2'-azobis(2-amidinopropane), a source of peroxy radicals in air saturated solution, readily reduces its hemolytic activity. Analysis of the amino acids present in the protein after its modification shows that only tryptophan groups are significantly modified by the free radicals. According to this, the loss of hemolytic activity correlates with the loss of the protein intrinsic fluorescence. The results indicate that, at high toxin concentrations, nearly a tryptophan residue and 0.2 toxin molecules are inactivated by each radical introduced into the system. Association of St II to multilamellar liposomes (egg yolk phosphatidyl choline:sphingomyelin 1:1) increases the toxin intrinsic fluorescence, indicating a more hydrophobic average environment of the five tryptophan groups of the protein. In agreement with this, incorporation of St II to the liposomes reduces the rate of fluorescence loss during its modification by free radicals, particularly at long incubation times. These results are explained in terms of two populations of tryptophans that are quenched at different rates by acrylamide and whose rates of inactivation by free radicals are also different.
CT Check Tags: Human; Support, Non-U.S. Gov't
Acrylamide: TO, toxicity
*Amidines: PD, pharmacology
Animals
Cnidarian Venoms: CH, chemistry
*Cnidarian Venoms: TO, toxicity
Erythrocytes: DE, drug effects
Fluorescence
Free Radicals
Hemolysins: CH, chemistry
*Hemolysins: DE, drug effects
*Oxidants: PD, pharmacology
***Sea Anemones**
*Sialyltransferases: PD, pharmacology
Tryptophan: CH, chemistry
RN 13217-66-8 (2,2'-azobis(2-amidinopropane)); 73-22-3 (Tryptophan); 79-06-1 (Acrylamide)
CN 0 (Amidines); 0 (Cnidarian Venoms); 0 (Free Radicals); 0 (Hemolysins); 0 (Oxidants); EC 2.4.99.- (Sialyltransferases); EC 2.4.99.8 (CMP-acetylneuraminate-alpha-N-acetylneuramide alpha-2,8-sialyltransferase)
L109 ANSWER 7 OF 21 MEDLINE on STN
AN 1998044660 MEDLINE
DN PubMed ID: 9383412
TI Proteins that glow in green and blue.
AU Coxon A; Bestor T H
CS Department of Pathology, Brigham and Women's Hospital, Boston, MA, USA.
NC CA60610 (NCI)
GM00616 (NIGMS)
SO Chemistry & biology, (1995 Mar) 2 (3) 119-21. Ref: 27
Journal code: 9500160. ISSN: 1074-5521.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals

EM 199801
 ED Entered STN: 19980129
 Last Updated on STN: 19980129
 Entered Medline: 19980114
 AB An intrinsically fluorescent protein from a Pacific jellyfish promises to become an important power tool in experimental biology. Mutant forms of this green fluorescent protein with altered spectral characteristics have recently been constructed. It is now possible to envision a range of derivatives optimized for specific applications.
 CT Check Tags: Support, U.S. Gov't, P.H.S.
 Aequorin: CH, chemistry
 Aequorin: ME, metabolism
 Animals
 Fluorescence
 ***Luminescent Proteins: CH, chemistry**
 Luminescent Proteins: DU, diagnostic use
 Luminescent Proteins: GE, genetics
 ***Scyphozoa: ME, metabolism**
 RN 147336-22-9 (green fluorescent protein); 50934-79-7 (Aequorin)
 CN 0 (Luminescent Proteins)

L109 ANSWER 8 OF 21 MEDLINE on STN
 AN 1998019228 MEDLINE
 DN PubMed ID: 9353317
 TI Deletions of the Aequorea victoria green fluorescent protein define the minimal domain required for fluorescence.
 AU Li X; Zhang G; Ngo N; Zhao X; Kain S R; Huang C C
 CS CLONTECH Laboratories, Inc., 1020 East Meadow Circle, Palo Alto, CA 94303, USA.. xqli@CLONTECH.com
 SO Journal of biological chemistry, (1997 Nov 7) 272 (45) 28545-9.
 Journal code: 2985121R. ISSN: 0021-9258.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199712
 ED Entered STN: 19980109
 Last Updated on STN: 19980109
 Entered Medline: 19971212
 AB The Green Fluorescent Protein (GFP) from the jellyfish Aequorea victoria is a widely used marker for gene expression and protein localization studies. Dissection of the structure of the protein would be expected to shed light on its potential applications to other fields such as the detection of protease activity. Using deletion analysis, we have defined the minimal domain in GFP required for fluorescence to amino acids 7-229. This domain starts at the middle of the first small alpha helix at the N terminus of GFP and ends immediately following the last beta sheet. Studies of the amino acids at both termini of the minimal domain revealed that positions 6 and 7 at the N terminus are Glu-specific. Change of the Glu residues to other amino acids results in reduction of GFP fluorescence. Position 229 at the C terminus of GFP, however, is nonspecific: the Ile can be replaced with other amino acids with no measurable loss of fluorescence. A total of only 15 terminal amino acids can be deleted from GFP without disrupting fluorescence, consistent with findings of a previous study of GFP crystal structure (Ormo, M., Cubitt, A. B., Kallio, K., Gross, L. A., Tsien, R. Y., Remington, S. J. (1996) Science 273, 1392-1395 and Yang, F., Moss, L. G., and Phillips, G. N., Jr. (1996) Nat. Biotechnol. 14, 1246-1251) that a tightly packed structure exists in the protein. We also generated internal deletions within the loop regions of GFP according to its crystal structure and found that all such deletions eliminated GFP fluorescence.
 CT Animals
 Binding Sites

CHO Cells
Flow Cytometry
 Fluorescence
 Glutamic Acid: GE, genetics
 Glutamic Acid: ME, metabolism
Hamsters
 Isoleucine: GE, genetics
 Isoleucine: ME, metabolism
 Luminescent Proteins: CH, chemistry
 *Luminescent Proteins: GE, genetics
 Scyphozoa
Sequence Deletion
Transfection

RN 147336-22-9 (green fluorescent protein); 56-86-0 (Glutamic Acid); 73-32-5 (Isoleucine)
CN 0 (Luminescent Proteins)

L109 ANSWER 9 OF 21 MEDLINE on STN

AN 97401158 MEDLINE

DN PubMed ID: 9256997

TI Detection of Aequorea victoria green fluorescent protein by capillary electrophoresis laser induced fluorescence detection.

AU Craig D B; Wong J C; Dovichi N J

CS Department of Chemistry, University of Alberta, Edmonton, Canada.

SO Biomedical chromatography : BMC, (1997 Jul-Aug) 11 (4) 205-6.

Journal code: 8610241. ISSN: 0269-3879.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199710

ED Entered STN: 19971021

Last Updated on STN: 19971021

Entered Medline: 19971009

AB Aequorea victoria green fluorescent protein was assayed by capillary electrophoresis using post-capillary laser-induced fluorescence detection in a sheath flow cuvette. The limit of detection was 3.0×10^{-12} M protein in an injection volume of 17 nL, corresponding to a mass of 3100 molecules.

CT Check Tags: Support, Non-U.S. Gov't
Animals

*Electrophoresis, Capillary: MT, methods

Fluorescence

Lasers

 *Luminescent Proteins: AN, analysis

 Scyphozoa: CH, chemistry

RN 147336-22-9 (green fluorescent protein)

CN 0 (Luminescent Proteins)

L109 ANSWER 10 OF 21 MEDLINE on STN

AN 97379430 MEDLINE

DN PubMed ID: 9237752

TI On/off blinking and switching behaviour of single molecules of green fluorescent protein.

AU Dickson R M; Cubitt A B; Tsien R Y; Moerner W E

CS Department of Chemistry and Biochemistry, University of California San Diego, La Jolla 92093-0340, USA.

SO Nature, (1997 Jul 24) 388 (6640) 355-8.

Journal code: 0410462. ISSN: 0028-0836.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199708
ED Entered STN: 19970825
Last Updated on STN: 19980206
Entered Medline: 19970812
AB Optical studies of individual molecules at low and room temperature can provide information about the dynamics of local environments in solids, liquids and biological systems unobscured by ensemble averaging. Here we present a study of the photophysical behaviour of single molecules of the green fluorescent protein (GFP) derived from the jellyfish *Aequorea victoria*. Wild-type GFP and its mutant have attracted interest as fluorescent biological labels because the fluorophore may be formed in vivo. GFP mutants immobilized in aerated aqueous polymer gels and excited by 488-nm light undergo repeated cycles of fluorescent emission ('blinking') on a timescale of several seconds-behaviour that would be unobservable in bulk studies. Eventually the individual GFP molecules reach a long-lasting dark state, from which they can be switched back to the original emissive state by irradiation at 405 nm. This suggests the possibility of using these GFPs as fluorescent markers for time-dependent cell processes, and as molecular photonic switches or optical storage elements, addressable on the single-molecule level.
CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
Animals
Escherichia coli
Fluorescence
*Luminescent Proteins: CH, chemistry
Luminescent Proteins: GE, genetics
Mutation
Photochemistry
Recombinant Fusion Proteins: CH, chemistry
Recombinant Fusion Proteins: GE, genetics
Scyphozoa
RN 147336-22-9 (green fluorescent protein)
CN 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)
L109 ANSWER 11 OF 21 MEDLINE on STN
AN 97327494 MEDLINE
DN PubMed ID: 9184161
TI Chromophore formation in green fluorescent protein.
AU Reid B G; Flynn G C
CS Institute of Molecular Biology and Department of Chemistry, University of Oregon, Eugene 97403, USA.
SO Biochemistry, (1997 Jun 3) 36 (22) 6786-91.
Journal code: 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199707
ED Entered STN: 19970721
Last Updated on STN: 19980206
Entered Medline: 19970703
AB The green fluorescent protein (GFP) from the jellyfish *Aequorea Victoria* forms an intrinsic chromophore through cyclization and oxidation of an internal tripeptide motif [Prasher, D. C., et al. (1992) Gene 111, 229-233; Cody, C. E., et al. (1993) Biochemistry 32, 1212-1218]. We monitored the formation of the chromophore in vitro using the S65T-GFP chromophore mutant. S65T-GFP recovered from inclusion bodies in *Escherichia coli* lacks the mature chromophore, suggesting that protein destined for inclusion bodies aggregated prior to productive folding. This material was used to follow the steps leading to chromophore formation. The process of chromophore formation in S65T-GFP was determined to be an ordered reaction consisting of three distinct kinetic steps. Protein folding occurs fairly slowly ($k(f) = 2.44 \times 10^{-3} \text{ s}^{-1}$)

and prior to any chromophore modification. Next, an intermediate step occurs that includes, but is not necessarily limited to, cyclization of the tripeptide chromophore motif ($k(c) = 3.8 \times 10^{-3} \text{ s}^{-1}$). The final and slow step ($k(ox) = 1.51 \times 10^{-4} \text{ s}^{-1}$) in chromophore formation involves oxidation of the cyclized chromophore. Since the chromophore forms de novo from purified denatured protein and is a first-order process, we conclude that GFP chromophore formation is an autocatalytic process.

CT Animals
 Cyclization
 Escherichia coli: UL, ultrastructure
 Inclusion Bodies: CH, chemistry
 Kinetics
 *Luminescent Proteins: CH, chemistry
 Oxidation-Reduction
 *Pigments: CH, chemistry
 Protein Denaturation
 Protein Folding
 Scyphozoa: CH, chemistry
 Spectrometry, Fluorescence
 RN 147336-22-9 (green fluorescent protein)
 CN 0 (Luminescent Proteins); 0 (Pigments)

L109 ANSWER 12 OF 21 MEDLINE on STN

AN 97318938 MEDLINE

DN PubMed ID: 9175875

TI 'Green mice' as a source of ubiquitous green cells.

AU Okabe M; Ikawa M; Kominami K; Nakanishi T; Nishimune Y

CS Research Institute for Microbial Diseases, Osaka University, Suita, Japan.. okabe@biken.osaka-u.ac.jp

SO FEBS letters, (1997 May 5) 407 (3) 313-9.

Journal code: 0155157. ISSN: 0014-5793.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199707

ED Entered STN: 19970716

Last Updated on STN: 19980206

Entered Medline: 19970701

AB The green fluorescent protein (GFP) is responsible for the green bioluminescence of the jellyfish Aequorea victoria. Many classes of GFP mutants exist that display modified fluorescence spectra and an increased extinction coefficient. We produced transgenic mouse lines with an 'enhanced' GFP (EGFP) cDNA under the control of a chicken beta-actin promoter and cytomegalovirus enhancer. All of the tissues from these transgenic lines, with the exception of erythrocytes and hair, were green under excitation light. The fluorescent nature of the cells from these transgenic mouse lines would facilitate their use in many kinds of cell transplantation experiments.

CT Check Tags: Female; Male

Actins: GE, genetics
 Animals
 Cell Separation
 Cell Transplantation
 Chickens
 Cytomegalovirus: GE, genetics
 Enhancer Elements (Genetics)
 Flow Cytometry
 Fluorescence
 Genes, Reporter
 *Luminescent Proteins: GE, genetics
 Luminescent Proteins: ME, metabolism

Mice
 *Mice, Transgenic: AH, anatomy & histology
 *Mice, Transgenic: GE, genetics
 Pregnancy

Promoter Regions (Genetics)

Scyphozoa: GE, genetics

Tissue Distribution

RN 147336-22-9 (green fluorescent protein)
 CN 0 (Actins); 0 (Luminescent Proteins)

L109 ANSWER 13 OF 21 MEDLINE on STN

AN 97148198 MEDLINE

DN PubMed ID: 8994830

TI Mutations that suppress the thermosensitivity of green fluorescent protein.

AU Siemering K R; Golbik R; Sever R; Haseloff J

CS MRC Laboratory of Molecular Biology, Cambridge, UK.

SO Current biology : CB, (1996 Dec 1) 6 (12) 1653-63.

Journal code: 9107782. ISSN: 0960-9822.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS GENBANK-U87973; GENBANK-U87974

EM 199702

ED Entered STN: 19970306

Last Updated on STN: 19980206

Entered Medline: 19970227

AB BACKGROUND: The green fluorescent protein (GFP) of the jellyfish *Aequorea victoria* has recently attracted great interest as the first example of a cloned reporter protein that is intrinsically fluorescent. Although successful in some organisms, heterologous expression of GFP has not always been straight forward. In particular, expression of GFP in cells that require incubation temperatures around 37 degrees C has been problematic. RESULTS: We have carried out a screen for mutant forms of GFP that fluoresce more intensely than the wild-type protein when expressed in *E. coli* at 37 degrees C. We have characterized a bright mutant (GFPa) with reduced sensitivity to temperature in both bacteria and yeast, and have shown that the amino acids substituted in GFPa act by preventing temperature-dependent misfolding of the GFP apoprotein. We have shown that the excitation and emission spectra of GFPa can be manipulated by site-directed mutagenesis without disturbing its improved folding characteristics, and have produced a thermostable folding mutant (GFP5) that can be efficiently excited using either long-wavelength ultraviolet or blue light. Expression of GFP5 results in greatly improved levels of fluorescence in both microbial and mammalian cells cultured at 37 degrees C. CONCLUSIONS: The thermotolerant mutants of GFP greatly improve the sensitivity of the protein as a visible reporter molecule in bacterial, yeast and mammalian cells. The fluorescence spectra of these mutants can be manipulated by further mutagenesis without deleteriously affecting their improved folding characteristics, so it may be possible to engineer a range of spectral variants with improved tolerance to temperature. Such a range of sensitive reporter proteins will greatly improve the prospects for GFP-based applications in cells that require relatively high incubation temperatures.

CT Check Tags: Support, Non-U.S. Gov't

Amino Acid Sequence

Animals

Apoproteins: CH, chemistry

Apoproteins: ME, metabolism

Base Sequence

COS Cells

DNA

Escherichia coli: ME, metabolism

Fluorescence

*Gene Expression

Luminescent Proteins: CH, chemistry

*Luminescent Proteins: GE, genetics

Luminescent Proteins: ME, metabolism

Molecular Sequence Data

Mutagenesis, Site-Directed

Oxidation-Reduction

Protein Folding

Recombinant Fusion Proteins: CH, chemistry

Recombinant Fusion Proteins: GE, genetics

Recombinant Fusion Proteins: ME, metabolism

Saccharomyces cerevisiae: ME, metabolism

Scyphozoa

Spectrometry, Fluorescence

Temperature

RN 147336-22-9 (green fluorescent protein); 9007-49-2 (DNA)

CN 0 (Apoproteins); 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)

L109 ANSWER 14 OF 21 MEDLINE on STN

AN 97105906 MEDLINE

DN PubMed ID: 8948654

TI Optimized codon usage and chromophore mutations provide enhanced sensitivity with the green fluorescent protein.

AU Yang T T; Cheng L; Kain S R

CS Cell Biology Group, CLONTECH Laboratories Inc., Palo Alto, CA 94303-4230, USA.

SO Nucleic acids research, (1996 Nov 15) 24 (22) 4592-3.

Journal code: 0411011. ISSN: 0305-1048.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199701

ED Entered STN: 19970219

Last Updated on STN: 19980206

Entered Medline: 19970117

AB The green fluorescent protein (GFP) from Aequorea victoria is a versatile reporter protein for monitoring gene expression and protein localization in a variety of cells and organisms. Despite many early successes using this reporter, wild type GFP is suboptimal for most applications due to low fluorescence intensity when excited by blue light (488 nm), a significant lag in the development of fluorescence after protein synthesis, complex photoisomerization of the GFP chromophore and poor expression in many higher eukaryotes. To improve upon these qualities, we have combined a mutant of GFP with a significantly larger extinction coefficient for excitation at 488 nm with a re-engineered GFP gene sequence containing codons preferentially found in highly expressed human proteins. The combination of improved fluorescence intensity and higher expression levels yield an enhanced GFP which provides greater sensitivity in most systems.

CT Check Tags: Human

Animals

CHO Cells

Cell Line

***Codon**

Flow Cytometry

Fluorescence

Hamsters

*Luminescent Proteins: GE, genetics

Scyphozoa

RN 147336-22-9 (green fluorescent protein)

CN 0 (Codon); 0 (Luminescent Proteins)

L109 ANSWER 15 OF 21 MEDLINE on STN

AN 96305138 MEDLINE

DN PubMed ID: 8707054

TI Deletion mapping of the Aequorea victoria green fluorescent protein.

AU Dopf J; Horiagon T M

CS Molecular Vaccine Laboratory, Human Gene Therapy Research Institute, Des Moines, IA 50309, USA.

SO Gene, (1996) 173 (1 Spec No) 39-44.

Journal code: 7706761. ISSN: 0378-1119.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS GENBANK-M62653

EM 199609

ED Entered STN: 19960919

Last Updated on STN: 19980206

Entered Medline: 19960911

AB Aequorea victoria green fluorescent protein (GFP) is a promising fluorescent marker which is active in a diverse array of prokaryotic and eukaryotic organisms. A key feature underlying the versatility of GFP is its capacity to undergo heterocyclic chromophore formation by cyclization of a tripeptide present in its primary sequence and thereby acquiring fluorescent activity in a variety of intracellular environments. In order to define further the primary structure requirements for chromophore formation and fluorescence in GFP, a series of N- and C-terminal GFP deletion variant expression vectors were created using the polymerase chain reaction. Scanning spectrofluorometric analyses of crude soluble protein extracts derived from eleven GFP expression constructs revealed that amino acid (aa) residues 2-232, of a total of 238 aa in the native protein, were required for the characteristic emission and absorption spectra of native GFP. Heterocyclic chromophore formation was assayed by comparing the absorption spectrum of GFP deletion variants over the 300-500-nm range to the absorption spectra of full-length GFP and GFP deletion variants missing the chromophore substrate domain from the primary sequence. GFP deletion variants lacking fluorescent activity showed no evidence of heterocyclic ring structure formation when the soluble extracts of their bacterial expression hosts were studied at pH 7.9. These observations suggest that the primary structure requirements for the fluorescent activity of GFP are relatively extensive and are compatible with the view that much of the primary structure serves an autocatalytic function.

CT **Amino Acid Sequence**

Animals

Base Sequence

Binding Sites

Cloning, Molecular

Electrophoresis, Polyacrylamide Gel

Fluorescence

Genetic Vectors

*Luminescent Proteins: CH, chemistry

Luminescent Proteins: GE, genetics

Molecular Sequence Data

Oligodeoxyribonucleotides

Scyphozoa

Sequence Deletion

Spectrometry, Fluorescence

RN 147336-22-9 (green fluorescent protein)

CN 0 (Genetic Vectors); 0 (Luminescent Proteins); 0 (Oligodeoxyribonucleotides)

L109 ANSWER 16 OF 21 MEDLINE on STN
 AN 95268500 MEDLINE
 DN PubMed ID: 7749464
 TI Induction of 70-kD heat shock protein in scleractinian corals by elevated temperature: significance for coral bleaching.
 AU Hayes R L; King C M
 CS Department of Anatomy, Howard University, Washington, D.C. 20059, USA.
 SO Molecular marine biology and biotechnology, (1995 Mar) 4 (1) 36-42.
 Journal code: 9205135. ISSN: 1053-6426.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199506
 ED Entered STN: 19950629
 Last Updated on STN: 19950629
 Entered Medline: 19950622
 AB In this study, the induction of the 70-kD family of heat shock proteins (hsp70) has been examined in stony coral tissues. In these experiments, the only difference from control conditions has been exposure to a temperature approximating that at which field bleaching in the Caribbean is known to occur, approximately 30 degrees C or 1 degree-2 degrees C above long-term average seasonal maximum temperatures. A constitutive hsp70 has been identified both in the zooxanthellate (hermatypic) coral, *Montastrea annularis*, and in two corals lacking symbiotic algae, *Tubastrea cocchineae* and *Astrangia danae* (Cnidaria, Anthozoa, Scleractinia). Western blots of experimental tissues fractionated by polyacrylamide gel electrophoresis indicate that the initial induction of hsp70 occurs rapidly, within one hour of transfer to water of elevated temperature. Thereafter, the level of hsp70 decreases within 12-24 hours to approximately the constitutive level. In field-bleached specimens of *M. annularis*, hsp70 is not detected. Since this coral tissue, once bleached to whiteness, contains no 70-kD heat shock protein, we conclude that the process of coral bleaching might include, among other metabolic alterations, a failed heat shock response. In addition to being compromised in other normal functions, the bleached coral would lose the capacity to protect itself against environmental stress. The eventual loss of algae by bleached coral is likely to be consequent to several metabolic changes in the coral tissue. However, the uncoupling of that symbiotic relation is not concomitant with the initial stress response of heat shock protein synthesis.
 CT Animals
 Blotting, Western
 *Cnidaria: ME, metabolism
 Electrophoresis, Polyacrylamide Gel
 Heat
 *Heat-Shock Proteins 70: BI, biosynthesis
 *Pigmentation
 CN 0 (Heat-Shock Proteins 70)

 L109 ANSWER 17 OF 21 MEDLINE on STN
 AN 94364470 MEDLINE
 DN PubMed ID: 8082767
 TI Evidence for redox forms of the *Aequorea* green fluorescent protein.
 AU Inouye S; Tsuji F I
 CS Marine Biology Research Division, University of California at San Diego, La Jolla 92093.
 SO FEBS letters, (1994 Sep 5) 351 (2) 211-4.
 Journal code: 0155157. ISSN: 0014-5793.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English

FS Priority Journals
OS GENBANK-L29345
EM 199410
ED Entered STN: 19941021
Last Updated on STN: 19980206
Entered Medline: 19941010
AB Highly purified recombinant Aequorea green fluorescent protein is able to undergo a reversible oxidation-reduction reaction in the presence of molecular oxygen. In the oxidized form in near UV light, the protein is highly fluorescent, but when reduced with sodium dithionite, it becomes completely non-fluorescent. On exposure to molecular oxygen the reduced, non-fluorescent protein reverts to its original fluorescent state.
CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
 Amino Acid Sequence
 Animals
 Base Sequence
 Fluorescence
 *Luminescent Proteins: CH, chemistry
 Luminescent Proteins: GE, genetics
 Luminescent Proteins: ME, metabolism
 Molecular Sequence Data
 Oxidation-Reduction
 Oxygen: ME, metabolism
 Recombinant Fusion Proteins: CH, chemistry
 *Scyphozoa: CH, chemistry
 Scyphozoa: ME, metabolism
 Spectrometry, Fluorescence
 Spectrophotometry
RN 147336-22-9 (green fluorescent protein); 7782-44-7 (Oxygen)
CN 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins)

L109 ANSWER 18 OF 21 MEDLINE on STN
AN 94185810 MEDLINE
DN PubMed ID: 8137953
TI Aequorea green fluorescent protein. Expression of the gene and fluorescence characteristics of the recombinant protein.
AU Inouye S; Tsuji F I
CS Marine Biology Research Division, Scripps Institution of Oceanography, University of California at San Diego, La Jolla 92093.
SO FEBS letters, (1994 Mar 21) 341 (2-3) 277-80.
Journal code: 0155157. ISSN: 0014-5793.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-L29345
EM 199404
ED Entered STN: 19940509
Last Updated on STN: 19980206
Entered Medline: 19940426
AB Expression of the cDNA for Aequorea green fluorescent protein in E. coli yielded a fused protein with fluorescence excitation and emission spectra virtually identical to those of the native green fluorescent protein. Further, a solution of the protein, when mixed with aequorin and calcium ion, emitted a greenish luminescence characteristic of the in vivo luminescence of the animal, indicating a radiationless energy transfer to the protein.
CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
 Amino Acid Sequence
 Animals
 Base Sequence
 DNA, Complementary
 Fluorescence

Luminescent Proteins: CH, chemistry
 *Luminescent Proteins: GE, genetics
 Molecular Sequence Data
 Recombinant Proteins: CH, chemistry
 Recombinant Proteins: GE, genetics
 *Scyphozoa: GE, genetics
 Sequence Alignment

RN 147336-22-9 (green fluorescent protein)

CN 0 (DNA, Complementary); 0 (Luminescent Proteins); 0 (Recombinant Proteins)

L109 ANSWER 19 OF 21 MEDLINE on STN

AN 88237947 MEDLINE

DN PubMed ID: 2454001

TI Phytophotodermatitis mimicking jellyfish envenomation.

AU Burnett J W; Horn T D; Mercado F; Niebyl P H

CS Department of Medicine, University of Maryland School of Medicine, Baltimore.

SO Acta dermato-venereologica, (1988) 68 (2) 168-71.

Journal code: 0370310. ISSN: 0001-5555.

CY Sweden

DT (CASE REPORTS)

Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 198807

ED Entered STN: 19900308

Last Updated on STN: 19980206

Entered Medline: 19880701

AB Two cases of citrus juice phytophotodermatoses with long **hyperpigmented** macular lesions are reported. These lesions simulated those resulting from jellyfish envenomation. The diagnosis can be established by the lack of local pain or signs of envenomation, and the absence of a serological response to jellyfish venom.

CT Check Tags: Female; Human

Adolescent

Adult

Animals

Citrus

*Cnidarian Venoms: AE, adverse effects

Cnidarian Venoms: IM, immunology

Diagnosis, Differential

Immunoglobulin G: AN, analysis

Photosensitivity Disorders: BL, blood

*Photosensitivity Disorders: DI, diagnosis

Photosensitivity Disorders: ET, etiology

Scyphozoa

CN 0 (Cnidarian Venoms); 0 (Immunoglobulin G)

L109 ANSWER 20 OF 21 MEDLINE on STN

AN 88227972 MEDLINE

DN PubMed ID: 2897362

TI X-ray diffraction and time-resolved fluorescence analyses of Aequorea green fluorescent protein crystals.

AU Perozzo M A; Ward K B; Thompson R B; Ward W W

CS Laboratory for the Structure of Matter, Naval Research Laboratory, Washington, D.C. 20375-5000.

SO Journal of biological chemistry, (1988 Jun 5) 263 (16) 7713-6.

Journal code: 2985121R. ISSN: 0021-9258.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 198806

ED Entered STN: 19900308
Last Updated on STN: 19950206
Entered Medline: 19880629

AB The energy transfer protein, green fluorescent protein, from the hydromedusan jellyfish *Aequorea victoria* has been crystallized in two morphologies suitable for x-ray diffraction analysis. Hexagonal plates have been obtained in the P6122 or P6522 space group with $a = b = 77.5$, $c = 370$ A, and no more than three molecules per asymmetric unit. Monoclinic parallel-epipeds have been obtained in the C2 space group with $a = 93.3$, $b = 66.5$, $c = 45.5$ A, $\beta = 108$ degrees, and one molecule per asymmetric unit. The monoclinic form is better suited for use in a structure determination, and a data set was collected from the native crystal. Time-resolved fluorescence measurements of large single crystals are possible due to the unique, covalently bound chromophore present in this molecule. Fluorescence emission spectra of *Aequorea* green fluorescent protein in solution and from either the hexagonal or monoclinic single crystal show similar profiles suggesting that the conformations of protein in solution and in the crystal are similar. Multifrequency phase fluorimetric data obtained from a single crystal were best fit by a single fluorescence lifetime very close to that exhibited by the protein in solution. The complementary structural data obtained from fluorescence spectroscopy and x-ray diffraction crystallography will aid in the elucidation of this novel protein's structure-function relationship.

CT Check Tags: Support, U.S. Gov't, Non-P.H.S.
***Aequorin: AN, analysis**
Animals
***Cnidaria**
Crystallization
***Fluorescence**
***Luminescent Proteins: AN, analysis**
***Scyphozoa**
X-Ray Diffraction

RN 50934-79-7 (Aequorin)
CN 0 (Luminescent Proteins)

L109 ANSWER 21 OF 21 MEDLINE on STN
AN 75208539 MEDLINE
DN PubMed ID: 238805
TI Bioluminescence: from chemical bonds to photons.
AU Hastings J W
SO Ciba Foundation symposium, (1975) (31) 125-46.
Journal code: 0356636. ISSN: 0300-5208.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197511
ED Entered STN: 19900310
Last Updated on STN: 19980206
Entered Medline: 19751105

AB The biological transformation of chemical to photic energy involves an enzyme-mediated chemiluminescent reaction, in which one of the products exists in an electronically excited state, emitting a photon as it returns to the ground state. The colour of bioluminescence differs in different organisms, ranging from the deep blue (460 nm) of certain crustacea, through the bluish green (490 nm) of some bacteria, the green (530 nm) of mushrooms to the red (about 600 nm) of the railroad worm. In one case, energy transfer has been demonstrated from the enzyme system to material that emits light with a longer wavelength. The energies involved range from about 165 to 250 kJ/einstein (40 to 60 kcal/einstein). Boyle first showed that air was involved in bioluminescence in 1668 in his experiments with an air pump. Over the past 100 years, it has become clear that most if not all bioluminescent systems require molecular oxygen. The recent

isolation and characterization of an oxygen-containing (peroxide) enzyme intermediate from the bacterial system is described and a reaction mechanism is postulated. This scheme is compared with other hypothetical mechanisms, in particular those involving a four-membered ring intermediate, a dioxetane, in which the simultaneous cleavage of two bonds leaves one product in an excited state. I shall discuss the special role of luciferases in bioluminescence, especially in flashing mechanisms involving 'precharged' intermediates.

CT Check Tags: Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.

Acridines: ME, metabolism

Animals

Annelida: ME, metabolism

Chromatography, Gel

Cnidaria: ME, metabolism

Crustacea: ME, metabolism

Diptera: ME, metabolism

Energy Transfer

Fishes: ME, metabolism

Flavoproteins: IP, isolation & purification

Fluorescence

Fungi: ME, metabolism

Luciferase: ME, metabolism

Luciferins: ME, metabolism

*Luminescence

Models, Biological

Models, Chemical

Oxidation-Reduction

Oxygen: ME, metabolism

Photobacterium: ME, metabolism

Spectrum Analysis

Temperature

RN 7782-44-7 (Oxygen)

CN 0 (Acridines); 0 (Flavoproteins); 0 (Luciferins); EC 1.13.12.- (Luciferase)

=> e coral/ct

E#	FREQUENCY	AT	TERM
E1	13		COR TRIATRIATUM: VE, VETERINARY/CT
E2	0	1	CORACANA/CT
E3	0	1 -->	CORAL/CT
E4	0	2	CORAL SNAKE/CT
E5	0	2	CORAL SNAKES/CT
E6	0	2	CORALS/CT
E7	0	2	CORAMIN/CT
E8	0	2	CORAMINE/CT
E9	0	2	CORASOL/CT
E10	0	1	CORAX/CT
E11	0	2	CORAX BRAND OF ACETYLDIGOXIN/CT
E12	0	2	CORAZOL/CT

=> e e6+all

E1	0	-->	Corals/CT
E2	326	USE	Anthozoa/CT
***** END *****			

=> e e2+all

E1	0	BT4	B Organisms/CT
E2	3574546	BT3	Animals/CT
E3	2855	BT2	Invertebrates/CT
E4	2226	BT1	Cnidaria/CT
E5	326	-->	Anthozoa/CT

```

E6          932      MN      B1.500.308.237./CT
                  DC      an INDEX MEDICUS major descriptor
                  NOTE    A class in the phylum CNIDARIA, comprised mostly
                           of corals and anemones. All members occur only as
                           polyps; the medusa stage is completely absent.
                  AQ      AH CH CL CY DE EM EN GD GE IM ME MI PH PS PY RE UL
                           VI
                  PNTE    Cnidaria (1970-2002)
                  HNTE    2003; for CORALS use CNIDARIA 1998-2002
                  MHTH    NLM (2003)
E7          0        UF      Corals/CT
E8          608      NT1     Sea Anemones/CT
***** END *****

```

=> e e4+all

```

E1          0        BT3     B Organisms/CT
E2          3574546  BT2     Animals/CT
E3          2855     BT1     Invertebrates/CT
E4          2226     -->    Cnidaria/CT
E5          4179     MN      B1.500.308./CT
                  DC      an INDEX MEDICUS major descriptor
                  NOTE    A phylum of radially symmetrical invertebrates
                           characterized by possession of stinging cells called
                           nematocysts. It includes the classes ANTHOZOA;
                           CUBOZOA; HYDROZOA, and SCYPHOZOA. Members carry
                           CNIDARIAN VENOMS.
                  INDX    poisoning: coord with CNIDARIAN VENOMS if pertinent
                  AQ      AH CH CL CY DE EM EN GD GE IM ME MI PH PS PY RE UL
                           VI
                  HNTE    1995 (1963)
                  MHTH    NLM (1966)
E6          0        UF      Cnidarians/CT
E7          326      NT1     Anthozoa/CT
E8          608      NT2     Sea Anemones/CT
E9          18       NT1     Cubozoa/CT
E10         42       NT1     Hydrozoa/CT
E11         762      NT2     Hydra/CT
E12         557      NT1     Scyphozoa/CT
E13         6        NT2     Sea Nettle, East Coast/CT
E14         797      RT      Cnidarian Venoms/CT
***** END *****

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=> s PPCT or pigment protein from coral tissue
L1 49 PPCT OR PIGMENT PROTEIN FROM CORAL TISSUE

=> s l1 and fluorescence
L2 16 L1 AND FLUORESCENCE

=> s l2 and incident light
L3 14 L2 AND INCIDENT LIGHT

=> s l3 and (maximum absorbance)
L4 0 L3 AND (MAXIMUM ABSORBANCE)

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by **incident light**
useful as tissue marker, fluorescent marker or general dyestuff
AN AAY97152 peptide DGENE
AB The N-terminal peptides shown in AAY97151-52 are from **pigment
protein from coral tissue (PPCT)**.
PPCT is capable of emitting **fluorescence** upon
irradiation by **incident light** whose maximal
absorbance is in the range of 320-600 nm and a maximal
fluorescence emission is in the range of 300-700 nm. **PPCT**

may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed).

PPCT may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97152 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein** from **coral tissue** N-terminal peptide 4.

L3 ANSWER 2 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAY97151 peptide DGENE
AB The N-terminal peptides shown in AAY97151-52 are from **pigment protein** from **coral tissue** (**PPCT**). **PPCT** is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97151 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein** from **coral tissue** N-terminal peptide 3.

L3 ANSWER 3 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAY97150 Protein DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (**PPCT**) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to

follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97150 Protein DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
CROSS REFERENCES: N-PSDB: AAA52083
DESCRIPTION: **Pigment protein** from coral tissue POC4.

L3 ANSWER 4 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff

AN AAY97149 Protein DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from coral tissue (**PPCT**) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97149 Protein DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
CROSS REFERENCES: N-PSDB: AAA52082
DESCRIPTION: **Pigment protein** from coral tissue POC3.

L3 ANSWER 5 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff

AN AAY97148 peptide DGENE
AB The N-terminal peptides shown in AAY97147-48 are from **pigment protein** from coral tissue (**PPCT**). **PPCT** is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT**

may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed).
PPCT may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97148 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein** from **coral tissue** N-terminal peptide 2.

L3 ANSWER 6 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAY97147 peptide DGENE
AB The N-terminal peptides shown in AAY97147-48 are from **pigment protein** from **coral tissue** (PPCT).
PPCT is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. PPCT may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed).
PPCT may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97147 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein** from **coral tissue** N-terminal peptide 1.

L3 ANSWER 7 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAA52088 DNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. PPCT may be used as a tissue marker, fluorescent marker (e.g. to

follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52088 DNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: Degenerate primer for **pigment protein** from **coral tissue** cDNA.

L3 ANSWER 8 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAA52087 DNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (**PPCT**) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52087 DNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: Primer POC4 reverse for **pigment protein** from **coral tissue** POC4 cDNA.

L3 ANSWER 9 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAA52086 DNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (**PPCT**) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to

follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52086 DNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: Primer POC4 forward for **pigment protein** from **coral tissue** POC4 cDNA.

L3 ANSWER 10 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52085 DNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (**PPCT**) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52085 DNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: Primer POC3 reverse for **pigment protein** from **coral tissue** POC3 cDNA.

L3 ANSWER 11 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52084 DNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (**PPCT**) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to

follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52084 DNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: Primer POC3 forward for **pigment protein** from **coral tissue** POC3 cDNA.

L3 ANSWER 12 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAA52083 cDNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52083 cDNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
CROSS REFERENCES: P-PSDB: AAY97150
DESCRIPTION: **Pigment protein** from **coral tissue** POC4 cDNA.

L3 ANSWER 13 OF 14 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
AN AAA52082 cDNA DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm.

PPCT may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). PPCT may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52082 cDNA DGENE
TITLE: Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
CROSS REFERENCES: P-PSDB: AAY97149
DESCRIPTION: **Pigment protein** from **coral tissue** POC3 cDNA.

L3 ANSWER 14 OF 14 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by **incident light**
useful as tissue marker, fluorescent marker or general dyestuff.

AN 2000-532892 [48] WPIDS

AB WO 200046233 A UPAB: 20001001

NOVELTY - A protein (I) comprising the N-terminal amino acid sequence of SVIAK or SVIAKQMTYKVYMSGTVN in a substantial purified form, or a fully defined Acropora aspera protein sequence of 231 (S1) or 235 amino acids as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide molecule (II) comprising a nucleotide sequence encoding a **pigment protein** from **coral tissue** (PPCT) (I) capable of emitting **fluorescence** upon irradiation by **incident light** whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm;

(2) a vector (III) comprising (II);

(3) a host cell (IV) transfected or transformed with (III);

(4) preparation of (I);

(5) an oligonucleotide probe or primer (V) comprising a nucleotide sequence that hybridizes selectively to (II);

(6) use of (I) as a tissue marker, fluorescent marker or general dye stuff;

(7) a sunscreen formulation comprising (I); and

(8) a filter (VI) for screening UV or other wavelength(s) of **incident light** comprising (I).

USE - (I) is used as a tissue marker, fluorescent marker or general dyestuff (all claimed). The protein could be used as a marker for following gene expression in transformed tissues. Product may be used in sunscreen formulations or UV filters (both claimed).

Dwg.0/10

ACCESSION NUMBER: 2000-532892 [48] WPIDS

DOC. NO. CPI: C2000-158783

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by **incident light** useful as tissue marker, fluorescent marker or general dyestuff.

DERWENT CLASS: B04 D16 D21 E14

INVENTOR(S): DOVE, S; HOECH-GULDBERG, O; HOEGH-GULDBERG, O

PATENT ASSIGNEE(S): (UNSY) UNIV SYDNEY

COUNTRY COUNT: 91

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000046233	A1	20000810	(200048)*	EN	49
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000026483	A	20000825	(200059)		
EP 1155028	A1	20011121	(200176)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					
CN 1345330	A	20020417	(200248)		
JP 2002535978	W	20021029	(200274)		47
BR 2000007837	A	20030225	(200320)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000046233	A1	WO 2000-AU56	20000202
AU 2000026483	A	AU 2000-26483	20000202
EP 1155028	A1	EP 2000-904699	20000202
		WO 2000-AU56	20000202
CN 1345330	A	CN 2000-805766	20000202
JP 2002535978	W	JP 2000-597303	20000202
		WO 2000-AU56	20000202
BR 2000007837	A	BR 2000-7837	20000202
		WO 2000-AU56	20000202

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000026483	A Based on	WO 2000046233
EP 1155028	A1 Based on	WO 2000046233
JP 2002535978	W Based on	WO 2000046233
BR 2000007837	A Based on	WO 2000046233

PRIORITY APPLN. INFO: AU 1999-8463 19990202

=> d his

(FILE 'HOME' ENTERED AT 15:01:52 ON 12 AUG 2004)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, JICST-EPLUS, JAPIO, BIOSIS, FSTA, CEN, SCISEARCH, BIOBUSINESS' ENTERED AT 15:02:32 ON 12 AUG 2004

L1 49 S PPCT OR PIGMENT PROTEIN FROM CORAL TISSUE
L2 16 S L1 AND FLUORESCENCE
L3 14 S L2 AND INCIDENT LIGHT
L4 0 S L3 AND (MAXIMUM ABSORBANCE)

=> d l2 ti abs ibib tot

L2 ANSWER 1 OF 16 USPATFULL on STN
TI Nucleic acid and amino acid sequences relating to Acinetobacter baumannii for diagnostics and therapeutics
AB The invention provides isolated polypeptide and nucleic acid sequences derived from Acinetobacter mirabilis that are useful in diagnosis and

therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:130010 USPATFULL
TITLE: Nucleic acid and amino acid sequences relating to
Acinetobacter baumannii for diagnostics and
therapeutics
INVENTOR(S): Breton, Gary, Marlborough, MA, United States
Bush, David, Somerville, MA, United States
PATENT ASSIGNEE(S): Genome Therapeutics Corporation, Waltham, MA, United
States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6562958	B1	20030513
APPLICATION INFO.:	US 1999-328352		19990604 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-88701P	19980609 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Borin, Michael	
LEGAL REPRESENTATIVE:	Genome Therapeutics Corporation	
NUMBER OF CLAIMS:	15	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	16618	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 2 OF 16 USPATFULL on STN

TI Nucleic acids, proteins and antibodies

AB This invention relates to newly identified prostate or prostate cancer related polynucleotides, the polypeptides encoded by these polynucleotides herein collectively referred to as "prostate cancer antigens," and to the complete gene sequences associated therewith and to the expression products thereof, and to antibodies that immunospecifically bind these polypeptides, as well as the use of such prostate cancer polynucleotides, antigens, and antibodies for detection, prevention, prognosis, and treatment of disorders of the reproductive system, particularly disorders of the prostate, including, but not limited to, the presence of prostate cancer and prostate cancer metastases. More specifically, isolated prostate cancer nucleic acid molecules are provided encoding novel prostate cancer polypeptides. Novel prostate cancer polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human prostate cancer polynucleotides, polypeptides, and/or antibodies. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to the prostate, including prostate cancer, and therapeutic methods for treating such disorders. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The invention further relates to methods and/or compositions for inhibiting or promoting the production and/or function of the polypeptides of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:273550 USPATFULL
TITLE: Nucleic acids, proteins and antibodies
INVENTOR(S): Rosen, Craig A., Laytonsville, MD, UNITED STATES

Ruben, Steven M., Olney, MD, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002151681	A1	20021017
APPLICATION INFO.:	US 2001-925300	A1	20010810 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. WO 2000-US5988, filed on 8 Mar 2000, UNKNOWN		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-124270P	19990312 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE, ROCKVILLE, MD, 20850	
NUMBER OF CLAIMS:	23	
EXEMPLARY CLAIM:	1	
LINE COUNT:	29771	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L2 ANSWER 3 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff
AN AAY97152 peptide DGENE
AB The N-terminal peptides shown in AAY97151-52 are from **pigment protein from coral tissue (PPCT)**.
PPCT is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97152 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein from coral tissue N-terminal peptide 4.**

L2 ANSWER 4 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff
AN AAY97151 peptide DGENE
AB The N-terminal peptides shown in AAY97151-52 are from **pigment protein from coral tissue (PPCT)**.
PPCT is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen

formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97151 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light
useful as tissue marker, fluorescent marker or general
dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein from coral
tissue N-terminal peptide 3.**

L2 ANSWER 5 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light useful as tissue
marker, fluorescent marker or general dyestuff
AN AAY97150 Protein DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora
aspera* to isolate sequences encoding polypeptides with N-terminal
sequences as shown in AAY97147-48. **Pigment protein**
from **coral tissue (PPCT)** is capable of
emitting **fluorescence** upon irradiation by incident light whose
maximal absorbance is in the range of 320-600 nm and a maximal
fluorescence emission is in the range of 300-700 nm. **PPCT**
may be used as a tissue marker, fluorescent marker (e.g. to follow gene
expression in transformed tissues) or general dyestuff (all claimed).
PPCT may also be used in sunscreen formulations or UV filters
(both claimed).

ACCESSION NUMBER: AAY97150 Protein DGENE
TITLE: Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light
useful as tissue marker, fluorescent marker or general
dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
CROSS REFERENCES: N-PSDB: AAA52083
DESCRIPTION: **Pigment protein from coral
tissue POC4.**

L2 ANSWER 6 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light useful as tissue
marker, fluorescent marker or general dyestuff
AN AAY97149 Protein DGENE
AB cDNA libraries were constructed from a blue pigmented coral, *Acropora
aspera* to isolate sequences encoding polypeptides with N-terminal
sequences as shown in AAY97147-48. **Pigment protein**
from **coral tissue (PPCT)** is capable of
emitting **fluorescence** upon irradiation by incident light whose
maximal absorbance is in the range of 320-600 nm and a maximal
fluorescence emission is in the range of 300-700 nm. **PPCT**
may be used as a tissue marker, fluorescent marker (e.g. to follow gene
expression in transformed tissues) or general dyestuff (all claimed).

PPCT may also be used in sunscreen formulations or UV filters
(both claimed).

ACCESSION NUMBER: AAY97149 Protein DGENE
TITLE: Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light
useful as tissue marker, fluorescent marker or general
dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
CROSS REFERENCES: N-PSDB: AAA52082
DESCRIPTION: **Pigment protein from coral
tissue POC3.**

L2 ANSWER 7 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light useful as tissue
marker, fluorescent marker or general dyestuff
AN AAY97148 peptide DGENE
AB The N-terminal peptides shown in AAY97147-48 are from **pigment
protein from coral tissue (PPCT)**.
PPCT is capable of emitting **fluorescence** upon
irradiation by incident light whose maximal absorbance is in the range of
320-600 nm and a maximal **fluorescence** emission is in the range
of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent
marker (e.g. to follow gene expression in transformed tissues) or general
dyestuff (all claimed). **PPCT** may also be used in sunscreen
formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97148 peptide DGENE
TITLE: Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light
useful as tissue marker, fluorescent marker or general
dyestuff
INVENTOR: Hoegh-Guldberg O; Dove S
PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.
PATENT INFO: WO 2000046233 A1 20000810 49p
APPLICATION INFO: WO 2000-AU56 20000202
PRIORITY INFO: AU 1999-8463 19990202
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-532892 [48]
DESCRIPTION: **Pigment protein from coral
tissue N-terminal peptide 2.**

L2 ANSWER 8 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel pigment protein derived from corals capable of emitting
fluorescence upon irradiation by incident light useful as tissue
marker, fluorescent marker or general dyestuff
AN AAY97147 peptide DGENE
AB The N-terminal peptides shown in AAY97147-48 are from **pigment
protein from coral tissue (PPCT)**.
PPCT is capable of emitting **fluorescence** upon
irradiation by incident light whose maximal absorbance is in the range of
320-600 nm and a maximal **fluorescence** emission is in the range
of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent
marker (e.g. to follow gene expression in transformed tissues) or general
dyestuff (all claimed). **PPCT** may also be used in sunscreen
formulations or UV filters (both claimed).

ACCESSION NUMBER: AAY97147 peptide DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

DESCRIPTION: **Pigment protein from coral tissue** N-terminal peptide 1.

L2 ANSWER 9 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52088 DNA DGENE

AB cdna libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein from coral tissue (PPCT)** is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52088 DNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

DESCRIPTION: Degenerate primer for **pigment protein from coral tissue** cdna.

L2 ANSWER 10 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52087 DNA DGENE

AB cdna libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein from coral tissue (PPCT)** is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52087 DNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

DESCRIPTION: Primer POC4 reverse for **pigment protein** from **coral tissue** POC4 cDNA.

L2 ANSWER 11 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52086 DNA DGENE

AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52086 DNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

DESCRIPTION: Primer POC4 forward for **pigment protein** from **coral tissue** POC4 cDNA.

L2 ANSWER 12 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52085 DNA DGENE

AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52085 DNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

DESCRIPTION: Primer POC3 reverse for **pigment protein** from **coral tissue** POC3 cDNA.

L2 ANSWER 13 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52084 DNA DGENE

AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52084 DNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

DESCRIPTION: Primer POC3 forward for **pigment protein** from **coral tissue** POC3 cDNA.

L2 ANSWER 14 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52083 cDNA DGENE

AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein** from **coral tissue** (PPCT) is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52083 cDNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

CROSS REFERENCES: P-PSDB: AAY97150

DESCRIPTION: **Pigment protein from coral tissue** POC4 cDNA.

L2 ANSWER 15 OF 16 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

AN AAA52082 cDNA DGENE

AB cDNA libraries were constructed from a blue pigmented coral, *Acropora aspera* to isolate sequences encoding polypeptides with N-terminal sequences as shown in AAY97147-48. **Pigment protein from coral tissue (PPCT)** is capable of emitting **fluorescence** upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm. **PPCT** may be used as a tissue marker, fluorescent marker (e.g. to follow gene expression in transformed tissues) or general dyestuff (all claimed). **PPCT** may also be used in sunscreen formulations or UV filters (both claimed).

ACCESSION NUMBER: AAA52082 cDNA DGENE

TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff

INVENTOR: Hoegh-Guldberg O; Dove S

PATENT ASSIGNEE: (UNSY)UNIV SYDNEY.

PATENT INFO: WO 2000046233 A1 20000810 49p

APPLICATION INFO: WO 2000-AU56 20000202

PRIORITY INFO: AU 1999-8463 19990202

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2000-532892 [48]

CROSS REFERENCES: P-PSDB: AAY97149

DESCRIPTION: **Pigment protein from coral tissue** POC3 cDNA.

L2 ANSWER 16 OF 16 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff.

AN 2000-532892 [48] WPIDS

AB WO 200046233 A UPAB: 20001001

NOVELTY - A protein (I) comprising the N-terminal amino acid sequence of SVIAK or SVIAKQMTYKVYMSGTVN in a substantial purified form, or a fully defined *Acropora aspera* protein sequence of 231 (S1) or 235 amino acids as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide molecule (II) comprising a nucleotide sequence encoding a **pigment protein from coral tissue (PPCT)** (I) capable of emitting

fluorescence upon irradiation by incident light whose maximal absorbance is in the range of 320-600 nm and a maximal **fluorescence** emission is in the range of 300-700 nm;
 (2) a vector (III) comprising (II);
 (3) a host cell (IV) transfected or transformed with (III);
 (4) preparation of (I);
 (5) an oligonucleotide probe or primer (V) comprising a nucleotide sequence that hybridizes selectively to (II);
 (6) use of (I) as a tissue marker, fluorescent marker or general dye stuff;
 (7) a sunscreen formulation comprising (I); and
 (8) a filter (VI) for screening UV or other wavelength(s) of incident light comprising (I).

USE - (I) is used as a tissue marker, fluorescent marker or general dyestuff (all claimed). The protein could be used as a marker for following gene expression in transformed tissues. Product may be used in sunscreen formulations or UV filters (both claimed).

Dwg.0/10

ACCESSION NUMBER: 2000-532892 [48] WPIDS
 DOC. NO. CPI: C2000-158783
 TITLE: Novel pigment protein derived from corals capable of emitting **fluorescence** upon irradiation by incident light useful as tissue marker, fluorescent marker or general dyestuff.
 DERWENT CLASS: B04 D16 D21 E14
 INVENTOR(S): DOVE, S; HOECH-GULDBERG, O; HOEGH-GULDBERG, O
 PATENT ASSIGNEE(S): (UNSY) UNIV SYDNEY
 COUNTRY COUNT: 91
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000046233	A1	20000810	(200048)*	EN	49
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000026483	A	20000825	(200059)		
EP 1155028	A1	20011121	(200176)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
CN 1345330	A	20020417	(200248)		
JP 2002535978	W	20021029	(200274)		47
BR 2000007837	A	20030225	(200320)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000046233	A1	WO 2000-AU56	20000202
AU 2000026483	A	AU 2000-26483	20000202
EP 1155028	A1	EP 2000-904699	20000202
		WO 2000-AU56	20000202
CN 1345330	A	CN 2000-805766	20000202
JP 2002535978	W	JP 2000-597303	20000202
		WO 2000-AU56	20000202
BR 2000007837	A	BR 2000-7837	20000202
		WO 2000-AU56	20000202

FILING DETAILS:

PATENT NO	KIND	PATENT NO
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AU 2000026483	A	Based on	WO 2000046233
EP 1155028	A1	Based on	WO 2000046233
JP 2002535978	W	Based on	WO 2000046233
BR 2000007837	A	Based on	WO 2000046233

PRIORITY APPLN. INFO: AU 1999-8463 19990202

=> d his

(FILE 'HOME' ENTERED AT 15:01:52 ON 12 AUG 2004)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, JICST-EPLUS, JAPIO, BIOSIS, FSTA, CEN, SCISEARCH, BIOBUSINESS' ENTERED AT 15:02:32 ON 12 AUG 2004

L1 49 S PPCT OR PIGMENT PROTEIN FROM CORAL TISSUE
 L2 16 S L1 AND FLUORESCENCE
 L3 14 S L2 AND INCIDENT LIGHT
 L4 0 S L3 AND (MAXIMUM ABSORBANCE)

=> s l1 and DNA

L5 7 L1 AND DNA

=> d l5 ti abs ibib tot

L5 ANSWER 1 OF 7 MEDLINE on STN

TI Induction of a cellular and humoral immune response against preprocalcitonin by genetic i: a potential new treatment for medullary thyroid carcinoma.

AB Currently, no effective therapy exists for patients suffering from progressive medullary thyroid carcinoma (MTC), a calcitonin (CT)-secreting C cell tumor. As CT, which arises from the precursor protein preprocalcitonin (PPCT), is expressed by almost all MTC cases, these molecules may represent target antigens for immunotherapy against MTC. In our study we investigated whether **DNA** immunization is able to induce cellular and humoral immune responses against human PPCT (hPPCT) in mice. Antigen-encoding expression plasmids were delivered intradermally by gene gun. One group of mice received **DNA** encoding hPPCT only. Two groups were coinjected with mouse cytokine genes. We observed in lymphocyte proliferative assays substantial proliferation against hPPCT in mice coinjected with the granulocyte-macrophage colony-stimulating factor (GM-CSF) gene, in contrast to mice vaccinated with hPPCT expression plasmid only. In addition, codelivery of the GM-CSF gene augmented the frequency of anti-hPPCT antibody seroconversions in sera of immunized animals, as shown by enzyme-linked immunosorbent assay. These results illustrate that cellular and humoral immune responses against hPPCT can be generated by **DNA** immunization and increased by coinjection of the GM-CSF gene. Our findings may have implications for the use of **DNA** immunization as a potential novel immunotherapeutic treatment for patients suffering from progressive MTC.

ACCESSION NUMBER: 2001205033 MEDLINE

DOCUMENT NUMBER: PubMed ID: 11181514

TITLE: Induction of a cellular and humoral immune response against preprocalcitonin by genetic i: a potential new treatment for medullary thyroid carcinoma.

AUTHOR: Haupt K; Siegel F; Lu M; Yang D; Hilken G; Mann K; Roggendorf M; Saller B

CORPORATE SOURCE: Institute for Virology, Division of Endocrinology, Department of Internal Medicine, University of Essen, 45122 Essen, Germany.. katharina.haupt@uniessen.de

SOURCE: Endocrinology, (2001 Mar) 142 (3) 1017-23.
 Journal code: 0375040. ISSN: 0013-7227.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200104
ENTRY DATE: Entered STN: 20010417
Last Updated on STN: 20010417
Entered Medline: 20010412

L5 ANSWER 2 OF 7 USPATFULL on STN
TI Rice promoters for regulation of plant expression
AB The invention provides a method to identify a plurality of plant promoters having a particular characteristic as well as the sequence of promoters having one of those characteristics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2004:20717 USPATFULL
TITLE: Rice promoters for regulation of plant expression
INVENTOR(S): Budworth, Paul, San Diego, CA, UNITED STATES
Moughamer, Todd, San Diego, CA, UNITED STATES
Briggs, Steven P., Del Mar, CA, UNITED STATES
Cooper, Bret, La Jolla, CA, UNITED STATES
Glazebrook, Jane, San Diego, CA, UNITED STATES
Goff, Stephen Arthur, Encinitas, CA, UNITED STATES
Katagiri, Fumiaki, San Diego, CA, UNITED STATES
Kreps, Joel, Carlsbad, CA, UNITED STATES
Provart, Nicholas, Toronto, CANADA
Ricke, Darrell, San Diego, CA, UNITED STATES
Zhu, Tong, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004016025	A1	20040122
APPLICATION INFO.:	US 2002-260238	A1	20020926 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-325448P	20010926 (60)
	US 2001-325277P	20010926 (60)
	US 2002-370620P	20020404 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	James E. Butler, Torrey Mesa Research Institute, 3115 Merryfield Row, San Diego, CA, 92121	
NUMBER OF CLAIMS:	77	
EXEMPLARY CLAIM:	1	
LINE COUNT:	18818	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 3 OF 7 USPATFULL on STN
TI Nucleic acid and amino acid sequences relating to Acinetobacter baumannii for diagnostics and therapeutics
AB The invention provides isolated polypeptide and nucleic acid sequences derived from Acinetobacter mirabilis that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:130010 USPATFULL
TITLE: Nucleic acid and amino acid sequences relating to Acinetobacter baumannii for diagnostics and therapeutics

INVENTOR(S): Breton, Gary, Marlborough, MA, United States
Bush, David, Somerville, MA, United States
PATENT ASSIGNEE(S): Genome Therapeutics Corporation, Waltham, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6562958	B1	20030513
APPLICATION INFO.:	US 1999-328352		19990604 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-88701P	19980609 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Borin, Michael	
LEGAL REPRESENTATIVE:	Genome Therapeutics Corporation	
NUMBER OF CLAIMS:	15	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	16618	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 4 OF 7 USPATFULL on STN

TI Nucleic acids, proteins and antibodies

AB This invention relates to newly identified prostate or prostate cancer related polynucleotides, the polypeptides encoded by these polynucleotides herein collectively referred to as "prostate cancer antigens," and to the complete gene sequences associated therewith and to the expression products thereof, and to antibodies that immunospecifically bind these polypeptides, as well as the use of such prostate cancer polynucleotides, antigens, and antibodies for detection, prevention, prognosis, and treatment of disorders of the reproductive system, particularly disorders of the prostate, including, but not limited to, the presence of prostate cancer and prostate cancer metastases. More specifically, isolated prostate cancer nucleic acid molecules are provided encoding novel prostate cancer polypeptides. Novel prostate cancer polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human prostate cancer polynucleotides, polypeptides, and/or antibodies. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to the prostate, including prostate cancer, and therapeutic methods for treating such disorders. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The invention further relates to methods and/or compositions for inhibiting or promoting the production and/or function of the polypeptides of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:273550 USPATFULL
TITLE: Nucleic acids, proteins and antibodies
INVENTOR(S): Rosen, Craig A., Laytonsville, MD, UNITED STATES
Ruben, Steven M., Olney, MD, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002151681	A1	20021017
APPLICATION INFO.:	US 2001-925300	A1	20010810 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. WO 2000-US5988, filed on 8 Mar 2000, UNKNOWN		

NUMBER	DATE
--------	------

PRIORITY INFORMATION: US 1999-124270P 19990312 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE,
ROCKVILLE, MD, 20850
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
LINE COUNT: 29771
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 5 OF 7 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN

TI Induction of a cellular and humoral immune response against
preprocalcitonin by genetic immunization: A potential new treatment for
medullary thyroid carcinoma.

AB Currently, no effective therapy exists for patients suffering from
progressive medullary thyroid carcinoma (MTC), a calcitonin (CT) secreting
C cell tumor. As CT, which arises from the precursor protein
preprocalcitonin (**PPCT**) is expressed by almost all MTC cases,
these molecules may represent target antigens for immunotherapy against
MTC. In our study we investigated whether **DNA** immunization is
able to induce cellular and humoral immune responses against human
PPCT (hPPCT) in mice. Antigen-encoding expression plasmids were
delivered intradermally by gene gun. One group of mice received
DNA encoding hPPCT only. Two groups were coinjected with mouse
cytokine genes. We observed in lymphocyte proliferative assays substantial
proliferation against hPPCT in mice coinjected with the
granulocyte-macrophage colony-stimulating factor (GM-CSF) gene, in
contrast to mice vaccinated with hPPCT expression plasmid only. In
addition, codelivery of the GM-CSF gene augmented the frequency of
anti-hPPCT antibody seroconversions in sera of immunized animals, as shown
by enzyme-linked immunosorbent assay. These results illustrate that
cellular and humoral immune responses against hPPCT can be generated by
DNA immunization and increased by coinjection of the GM-CSF gene.
Our findings may have implications for the use of **DNA**
immunization as a potential novel immunotherapeutic treatment for patients
suffering from progressive MTC.

ACCESSION NUMBER: 2001095403 EMBASE

TITLE: Induction of a cellular and humoral immune response against
preprocalcitonin by genetic immunization: A potential new
treatment for medullary thyroid carcinoma.

AUTHOR: Haupt K.; Siegel F.; Lu M.; Yang D.; Hilken G.; Mann K.;
Roggendorf M.; Saller B.

CORPORATE SOURCE: Dr. K. Haupt, Institute for Virology, University of Essen,
Hufelandstrasse 55, 45122 Essen, Germany.
katharina.haupt@uniessen.de

SOURCE: Endocrinology, (2001) 142/3 (1017-1023).
Refs: 48

ISSN: 0013-7227 CODEN: ENDOAO

COUNTRY: United States

DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 003 Endocrinology
016 Cancer
026 Immunology, Serology and Transplantation
037 Drug Literature Index

LANGUAGE: English

SUMMARY LANGUAGE: English

L5 ANSWER 6 OF 7 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Induction of a cellular and humoral immune response against
preprocalcitonin by genetic immunization: A potential new treatment for
medullary thyroid carcinoma.

AB Currently, no effective therapy exists for patients suffering from

progressive medullary thyroid carcinoma (MTC), a calcitonin (CT)-secreting C cell tumor. As CT, which arises from the precursor protein preprocalcitonin (**PPCT**), is expressed by almost all MTC cases, these molecules may represent target antigens for immunotherapy against MTC. In our study we investigated whether **DNA** immunization is able to induce cellular and humoral immune responses against human **PPCT** (hPPCT) in mice. Antigen-encoding expression plasmids were delivered intradermally by gene gun. One group of mice received **DNA** encoding hPPCT only. Two groups were coinjected with mouse cytokine genes. We observed in lymphocyte proliferative assays substantial proliferation against hPPCT in mice coinjected with the granulocyte-macrophage colony-stimulating factor (GM-CSF) gene, in contrast to mice vaccinated with hPPCT expression plasmid only. In addition, codelivery of the GM-CSF gene augmented the frequency of anti-hPPCT antibody seroconversions in sera of immunized animals, as shown by enzyme-linked immunosorbent assay. These results illustrate that cellular and humoral immune responses against hPPCT can be generated by **DNA** immunization and increased by coinjection of the GM-CSF gene. Our findings may have implications for the use of **DNA** immunization as a potential novel immunotherapeutic treatment for patients suffering from progressive MTC.

ACCESSION NUMBER: 2001:145072 BIOSIS

DOCUMENT NUMBER: PREV200100145072

TITLE: Induction of a cellular and humoral immune response against preprocalcitonin by genetic immunization: A potential new treatment for medullary thyroid carcinoma.

AUTHOR(S): Haupt, K. [Reprint author]; Siegel, F.; Lu, M.; Yang, D.; Hilken, G.; Mann, K.; Roggendorf, M.; Saller, B.

CORPORATE SOURCE: Institute for Virology, University of Essen, Hufelandstrasse 55, 45122, Essen, Germany
katharina.haupt@uniessen.de

SOURCE: Endocrinology, (March, 2001) Vol. 142, No. 3, pp. 1017-1023. print.

CODEN: ENDOAO. ISSN: 0013-7227.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 21 Mar 2001

Last Updated on STN: 15 Feb 2002

L5 ANSWER 7 OF 7 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN

TI Induction of a cellular and humoral immune response against preprocalcitonin by genetic immunization: A potential new treatment for medullary thyroid carcinoma

AB Currently, no effective therapy exists for patients suffering from progressive medullary thyroid carcinoma (MTC), a calcitonin (CT)secreting C cell tumor. As CT, which arises from the precursor protein preprocalcitonin (**PPCT**), is expressed by almost all MTC cases, these molecules may represent target antigens for immunotherapy against MTC. In our study we investigated whether **DNA** immunization is able to induce cellular and humoral immune responses against human **PPCT** (hPPCT) in mice. Antigen-encoding expression plasmids were delivered intradermally by gene gun. One group of mice received **DNA** encoding hPPCT only. Two groups were coinjected with mouse cytokine genes. We observed in lymphocyte proliferative assays substantial proliferation against hPPCT in mice coinjected with the granulocyte-macrophage colony-stimulating factor (GM-CSF) gene, in contrast to mice vaccinated with hPPCT expression plasmid only. In addition, codelivery of the GM-CSF gene augmented the frequency of anti-hPPCT antibody seroconversions in sera of immunized animals, as shown by enzyme-linked immunosorbent assay. These results illustrate that cellular and humoral immune responses against hPPCT can be generated by **DNA** immunization and increased by coinjection of the GM-CSF gene. Our findings may have implications for the use of **DNA** immunization as a potential novel immunotherapeutic treatment for patients

suffering from progressive MTC.

ACCESSION NUMBER: 2001:197302 SCISEARCH

THE GENUINE ARTICLE: 405NT

TITLE: Induction of a cellular and humoral immune response
against preprocalcitonin by genetic immunization: A
potential new treatment for medullary thyroid carcinoma

AUTHOR: Haupt K (Reprint); Siegel F; Lu M; Yang D; Hilken G; Mann
K; Roggendorf M; Saller B

CORPORATE SOURCE: Univ Essen Gesamthsch, Inst Virol, Div Endocrinol, Dept
Internal Med, Hufelandstr 55, D-45122 Essen, Germany
(Reprint); Univ Essen Gesamthsch, Inst Virol, Div
Endocrinol, Dept Internal Med, D-45122 Essen, Germany;
Univ Essen Gesamthsch, Cent Anim Lab, D-45122 Essen,
Germany

COUNTRY OF AUTHOR: Germany

SOURCE: ENDOCRINOLOGY, (MAR 2001) Vol. 142, No. 3, pp. 1017-1023.
Publisher: ENDOCRINE SOC, 4350 EAST WEST HIGHWAY SUITE
500, BETHESDA, MD 20814-4110 USA.
ISSN: 0013-7227.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 49

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

=> d his

(FILE 'HOME' ENTERED AT 15:01:52 ON 12 AUG 2004)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, JICST-EPLUS, JAPIO,
BIOSIS, FSTA, CEN, SCISEARCH, BIOBUSINESS' ENTERED AT 15:02:32 ON 12 AUG
2004

L1 49 S PPCT OR PIGMENT PROTEIN FROM CORAL TISSUE

L2 16 S L1 AND FLUORESCENCE

L3 14 S L2 AND INCIDENT LIGHT

L4 0 S L3 AND (MAXIMUM ABSORBANCE)

L5 7 S L1 AND DNA

=> s coral tissue and (pigment protein)

10 FILES SEARCHED...

L6 14 CORAL TISSUE AND (PIGMENT PROTEIN)

=> s l6 and (maximal fluorescence emission)

L7 14 L6 AND (MAXIMAL FLUORESCENCE EMISSION)

=> e guldberg, o/au

E1 1 GULDBERG T/AU

E2 1 GULDBERG THOR IVAR/AU

E3 0 --> GULDBERG, O/AU

E4 3 GULDBERGKJAER N/AU

E5 7 GULDBERGKJAER S/AU

E6 2 GULDBERGPEDERSEN H/AU

E7 1 GULDBORG E/AU

E8 17 GULDBORG M/AU

E9 2 GULDBORG NYVOLD C/AU

E10 1 GULDBRAND G/AU

E11 1 GULDBRAND H/AU

E12 11 GULDBRAND L/AU

=> e dove, s/au

E1 13 DOVE WINIFRED/AU

E2 4 DOVE Y/AU

E3 0 --> DOVE, S/AU

E4 1 DOVEALYUK A N/AU

E5	1	DOVEAN V M/AU
E6	2	DOVECAR/AU
E7	3	DOVECAR F/AU
E8	3	DOVECAR FRANK/AU
E9	1	DOVECAR G/AU
E10	3	DOVECK M M/AU
E11	1	DOVEDAR S/AU
E12	1	DOVEDOV A M/AU

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 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

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result set

DB=USPT; PLUR=YES; OP=OR

<u>L7</u>	15 and fluorescence	2	<u>L7</u>
<u>L6</u>	12 and 11	0	<u>L6</u>
<u>L5</u>	L3 and 11	33	<u>L5</u>
<u>L4</u>	L3 and 12	0	<u>L4</u>
<u>L3</u>	dove.in.	288	<u>L3</u>
<u>L2</u>	guldberg.in.	12	<u>L2</u>
<u>L1</u>	PPCT or pigment protein from coral tissue	377840	<u>L1</u>

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☐ 1. Document ID: US 6200759 B1

L7: Entry 1 of 2

File: USPT

Mar 13, 2001

US-PAT-NO: 6200759

DOCUMENT-IDENTIFIER: US 6200759 B1

**** See image for Certificate of Correction ****

TITLE: Interaction trap assay, reagents and uses thereof

DATE-ISSUED: March 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dove</u> ; Simon	Cambridge	MA		
Joung; Keith J.	Cambridge	MA		
Hochschild; Ann	Brookline	MA		

US-CL-CURRENT: 435/6; 435/7.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Abstract	Claims	FIGURE	Drawings
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☐ 2. Document ID: US 5925523 A

L7: Entry 2 of 2

File: USPT

Jul 20, 1999

US-PAT-NO: 5925523

DOCUMENT-IDENTIFIER: US 5925523 A

TITLE: Intraction trap assay, reagents and uses thereof

DATE-ISSUED: July 20, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dove</u> ; Simon	Cambridge	MA		
Joung; J. Keith	Winchester	MA		
Hochschild; Ann	Brookline	MA		

US-CL-CURRENT: 435/6; 435/29

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Abstract	Claims	FIGURE	Drawings
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 IBM Technical Disclosure Bulletins

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<u>L2</u>	guldberg.in.	12	<u>L2</u>
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☐ 1. Document ID: US 6774386 B2

L15: Entry 1 of 802

File: USPT

Aug 10, 2004

US-PAT-NO: 6774386

DOCUMENT-IDENTIFIER: US 6774386 B2

TITLE: Image information read-out apparatus

DATE-ISSUED: August 10, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Karasawa; Hiroyuki	Kaisei-machi			JP

US-CL-CURRENT: 250/586; 250/582

Full	Title	Citation	Front	Review	Classification	Date	Reference	Examiner's	Abstract	Claims	Notes	Drawings
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☐ 2. Document ID: US 6774119 B1

L15: Entry 2 of 802

File: USPT

Aug 10, 2004

US-PAT-NO: 6774119

DOCUMENT-IDENTIFIER: US 6774119 B1

TITLE: HERPES SIMPLEX VIRUS TYPE 1 (HSV-1)-DERIVED VECTOR FOR SELECTIVELY INHIBITING MALIGNANT CELLS AND METHODS FOR ITS USE TO TREAT CANCERS AND TO EXPRESS DESIRED TRAITS IN MALIGNANT AND NON-MALIGNANT MAMMALIAN CELLS

DATE-ISSUED: August 10, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wechsler; Steven L.	Westlake Village	CA		
Nesburn; Anthony B.	Malibu	CA		
Perng; Guey-Chuen	Alhambra	CA		
Yu; John S.	Los Angeles	CA		
Black; Keith L.	Los Angeles	CA		

US-CL-CURRENT: 514/44; 424/130.1, 424/93.2, 435/320.1, 435/455, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstracts	Attachments	Claims	Publ	Draw
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☐ 3. Document ID: US 6773885 B1

L15: Entry 3 of 802

File: USPT

Aug 10, 2004

US-PAT-NO: 6773885

DOCUMENT-IDENTIFIER: US 6773885 B1

TITLE: Compositions and methods for visual ribonuclease detection assays

DATE-ISSUED: August 10, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Walder; Joseph Alan	Chicago	IL		
Behlke; Mark Aaron	Iowa City	IA		
Devor; Eric Jeffrey	Iowa City	IA		
Huang; Lingyan	Coralville	IA		

US-CL-CURRENT: 435/6; 536/23.1, 536/24.3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstracts	Attachments	Claims	Publ	Draw
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☐ 4. Document ID: US 6772070 B2

L15: Entry 4 of 802

File: USPT

Aug 3, 2004

US-PAT-NO: 6772070

DOCUMENT-IDENTIFIER: US 6772070 B2

TITLE: Methods of analyzing polymers using a spatial network of fluorophores and fluorescence resonance energy transfer

DATE-ISSUED: August 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gilmanshin; Rudolf	Waltham	MA		
Chan; Eugene Y	Boston	MA		

US-CL-CURRENT: 702/19; 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstracts	Attachments	Claims	Publ	Draw
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☐ 5. Document ID: US 6770485 B2

L15: Entry 5 of 802

File: USPT

Aug 3, 2004

US-PAT-NO: 6770485
DOCUMENT-IDENTIFIER: US 6770485 B2

TITLE: Rapid assay, method and system for detecting biowarfare agents

DATE-ISSUED: August 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Knezevic; Vladimir	Gaithersburg	MD		
Hartmann; Dan-Paul	Bethesda	MD		
Cohen; Jonathan	Potomac	MD		
Marcus; Elizabeth	Washington	DC		

US-CL-CURRENT: [436/86](#); [422/58](#), [422/61](#), [436/104](#), [436/163](#), [436/164](#), [436/166](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Attachments	Claims	Keywords	Drawings
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☐ 6. Document ID: US 6770449 B2

L15: Entry 6 of 802

File: USPT

Aug 3, 2004

US-PAT-NO: 6770449
DOCUMENT-IDENTIFIER: US 6770449 B2

TITLE: Methods of assaying receptor activity and constructs useful in such methods

DATE-ISSUED: August 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barak; Lawrence S.	Durham	NC		
Caron; Marc G.	Hillsborough	NC		
Ferguson; Stephen S.	London			CA
Zhang; Jie	Durham	NC		

US-CL-CURRENT: [435/7.2](#); [435/325](#), [435/4](#), [435/7.1](#), [530/350](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Attachments	Claims	Keywords	Drawings
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☐ 7. Document ID: US 6767706 B2

L15: Entry 7 of 802

File: USPT

Jul 27, 2004

US-PAT-NO: 6767706
DOCUMENT-IDENTIFIER: US 6767706 B2

TITLE: Integrated active flux microfluidic devices and methods

DATE-ISSUED: July 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Quake; Stephen R.	San Marino	CA		
Chou; Hou-Pu	Foster City	CA		

US-CL-CURRENT: 435/6; 435/287.2, 435/7.1, 435/91.1, 435/91.2, 536/22.1, 536/23.1,
536/24.3, 536/24.31, 536/24.32, 536/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Attachments	Claims	FIGURE	Draw D
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☐ 8. Document ID: US 6766184 B2

L15: Entry 8 of 802

File: USPT

Jul 20, 2004

US-PAT-NO: 6766184

DOCUMENT-IDENTIFIER: US 6766184 B2

TITLE: Methods and apparatus for diagnostic multispectral digital imaging

DATE-ISSUED: July 20, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Utzinger; Urs	Tucson	AZ		
Richards-Kortum; Rebecca	Austin	TX		
MacAuldy; Calum	Cancouver			CA
Follen; Michele	Houston	TX		

US-CL-CURRENT: 600/407; 356/318, 356/417, 356/418, 600/425, 600/591

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Attachments	Claims	FIGURE	Draw D
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☐ 9. Document ID: US 6766183 B2

L15: Entry 9 of 802

File: USPT

Jul 20, 2004

US-PAT-NO: 6766183

DOCUMENT-IDENTIFIER: US 6766183 B2

TITLE: Long wave fluorophore sensor compounds and other fluorescent sensor compounds in polymers

DATE-ISSUED: July 20, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Walsh; Joseph C.	Los Angeles	CA		
Heiss; Aaron M.	Orange	OH		
Noronha; Glenn	Oceanside	CA		
Vachon; David J.	Granada Hills	CA		

Lane; Stephen M.	Oakland	CA
Satcher, Jr.; Joe H.	Patterson	CA
Peyser; Thomas A.	Menlo Park	CA
Van Antwerp; William Peter	Valencia	CA
Mastrototaro; John Joseph	Los Angeles	CA

US-CL-CURRENT: 600/317; 422/82.07, 436/172, 436/94, 436/95, 546/13, 568/1, 600/341

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstracts	Attachments	Claims	Kind	Draw De
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☐ 10. Document ID: US 6764686 B2

L15: Entry 10 of 802

File: USPT

Jul 20, 2004

US-PAT-NO: 6764686

DOCUMENT-IDENTIFIER: US 6764686 B2

TITLE: Modified immunogenic pneumolysin compositions as vaccines

DATE-ISSUED: July 20, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Minetti; Conceicao	Silver Spring	MD		
Michon; Francis	Bethesda	MD		
Pullen; Jeffrey K.	Columbia	MD		
Polvino-Bodnar; Mary Ellen	Annapolis	MD		
Liang; Shu-Mei	Taipei			TW
Tai; Joseph Y.	Collegeville	PA		

US-CL-CURRENT: 424/236.1; 424/184.1, 424/185.1, 424/190.1, 424/194.1, 424/197.11,
424/203.1, 424/234.1, 424/244.1, 424/831, 530/350, 530/825

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstracts	Attachments	Claims	Kind	Draw De
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DOCUMENT-IDENTIFIER: US 6774386 B2

TITLE: Image information read-out apparatus

Brief Summary Text (5):

When certain kinds of phosphor are exposed to a radiation, they store a part of energy of the radiation. Then when the phosphor which has been exposed to the radiation is exposed to stimulating rays such as visible light or a laser beam, light is emitted from the phosphor in proportion to the stored energy of the radiation. A phosphor exhibiting such properties is generally referred to as "a stimuable phosphor". In this specification, the light emitted from the stimuable phosphor upon stimulation thereof will be referred to as "stimulated emission". There has been put into wide use as a computed radiography a radiation image recording and reproducing system using a stimuable phosphor sheet (a sheet provided with a layer of the stimuable phosphor).

Brief Summary Text (6):

In the radiation image recording and reproducing system, a stimuable phosphor sheet is exposed to a radiation passing through an object such as a human body to have a radiation image information of the object stored on the stimuable phosphor sheet, a stimulating light beam such as a laser beam is caused to two-dimensionally scan the stimuable phosphor sheet, thereby causing each part of the stimuable phosphor sheet exposed to the stimulating light beam to emit the stimulated emission, the stimulated emission is photoelectrically detected, thereby obtaining an image signal (a radiation image signal) representing the radiation image information, the radiation image signal thus obtained is subjected to image processing such as gradation processing and/or frequency processing and a radiation image of the object is reproduced as a visible image for diagnosis on the basis of the processed radiation image signal on a recording medium such as a photographic film or a display such as a CRT.

Brief Summary Text (7):

In the radiation image information read-out apparatus employed in the radiation image recording and reproducing apparatus, it has been proposed to use a line light source which projects a line beam onto the stimuable phosphor sheet as a stimulating light source and to use a line sensor having an array of photoelectric convertor elements extending in the main scanning direction (the longitudinal direction of the line beam) as a means for photoelectrically reading out the stimulated emission. The line beam and the line sensor are moved relative to the stimuable phosphor sheet in the sub-scanning direction (the direction perpendicular to the longitudinal direction of the line beam) by a scanning means. By the use of a line beam and a line sensor, the reading time is shortened, the overall size of the apparatus can be reduced and the cost can be reduced. See, for instance, Japanese Unexamined Patent Publication Nos. 60 (1985)-111568, 60 (1985)-236354, and 1 (1989)-101540. In such a radiation image information read-out apparatus, the line sensor is positioned close to the stimuable phosphor sheet and an erecting unit optical system is provided between the line sensor and the stimuable phosphor sheet in order to collect the stimulated emission on the light receiving face of the line sensor.

Brief Summary Text (9):

The length of the line sensor should be equivalent to the width of the stimuable phosphor sheet which is generally 35 cm to 43 cm. Since the sensor chips commercially available at present is from several tens mm to about 100 mm in length, a line sensor formed by arranging a plurality of sensor chips in a row has been employed in the radiation image information read-out apparatus. Since each of the sensor chips is packaged, the parts between adjacent sensor chips form dead zones (noneffective zones) where the stimulated emission cannot be detected. Accordingly, stimulated emission which impinges upon the noneffective zones of the line sensor cannot be detected, which generates artifact in images obtained.

Brief Summary Text (11):

In the field of biochemistry and the molecular biology, there has been known a fluorescence detecting system in which detection of the gene sequence, the gene expression level, and the pathway and/or condition of metabolism, absorption and excretion of material administered to a mouse; and separation, identification, and evaluation of molecular weight and properties of protein can be carried out by reading out image information on a sample in which a specific organism-derived material labeled with fluorescent pigment is distributed. In the fluorescence detecting system, for example, a gel support on which a specific DNA fraction (an organism-derived material) labeled with fluorescent pigment is distributed is obtained, exciting light which excites the fluorescent pigment is projected onto the gel support, fluorescence emitted from the gel support is photoelectrically read, thereby obtaining image information representing the distribution of the DNA fraction labeled with the fluorescent pigment, and the distribution of the DNA fraction is displayed on, for instance, a CRT display on the basis of the image information thus obtained.

Brief Summary Text (18):

When the image-bearing medium is a stimuable phosphor sheet, the image-bearing light is the stimulated emission. That is, the image information read-out apparatus of this invention can be employed as a radiation image information read-out apparatus for said computed radiography.

Brief Summary Text (19):

It is preferred that the stimuable phosphor sheet be anisotropic and radiates the stimulated emission in a direction at a predetermined angle to the direction of thickness of the stimuable phosphor sheet. In this case, it is preferred that the image-bearing light (stimulated emission) detecting system be arranged so that the stimulated emission incident face of the erecting unit optical system is positioned in perpendicular to the direction at the predetermined angle to the direction of thickness of the stimuable phosphor sheet.

Brief Summary Text (21):

The medium bearing thereon a fluorescent material image is, for instance, a gel support on which a specific DNA fraction (an organism-derived material) labeled with fluorescent pigment is distributed, and the expression "bearing thereon a fluorescent material image" should be broadly interpreted to include both a case where the medium bears thereon an image of the sample labeled with fluorescent pigment and a case where enzyme is bonded with the labeled sample, the enzyme is brought into contact with a fluorescent substrate to change the substrate into a fluorescent material which emits fluorescence, and the medium bears an image of the fluorescent material thus obtained.

Brief Summary Text (22):

Combinations of fluorescent pigment which is used for forming a labeled sample image on a medium and a wavelength of the reading light (exciting or stimulating light) for causing the pigment to emit fluorescence are as follows. When the reading light is a laser beam of 470 nm or 480 nm, the fluorescent pigment may be any so long as it can be excited by a laser beam at the wavelength. For example, Fluorescein (C.I. No. 45350), Fluorescein-X represented by the following structural formula (1), YoYo-1 represented by the following structural formula (2), ToTO-1 represented by the following structural formula (3), Yo-Pro-1 represented by the following structural formula (4), Cy-3.RTM. represented by the following structural formula (5), Nile Red represented by the following structural formula (6), BCECF represented by the following structural formula (7), Rohdamine 6G (C. I. No. 45160), Acridine Orange (C.I. No. 46005), SYBR Green (C.sub.2 H.sub.6 OS), Quantum Red, R-Phycoerythrin, Red 613, Red 670, Fluor X, Fluorescein-labeled amidite, FAM, AttoPhos, Bodipy phosphatidylcholine, SNAFL, Calcium Green, Fura Red, Fluo 3, AllPro, NBD phosphoethanolamine, and the like may be preferably employed. When the reading light is a laser beam of 633 nm or 635 nm, the fluorescent pigment may be any so long as it can be excited by a laser beam at the wavelength. For example, Cy-5.RTM. represented by the following structural formula (8) and Allphycocyanin may be preferably employed. When the

reading light is a laser beam of 530 nm or 540 nm, the fluorescent pigment may be any so long as it can be excited by a laser beam at the wavelength. For example, Cy-3.RTM. represented by the following structural formula (5), Rohdamine 6G (C. I. No. 45160), Rohdamine B (C.I. No. 45170), Ethidium Bromide represented by the following structural formula (9), Texas Red represented by the following structural formula (10), Propidium Iodide represented by the following structural formula (11), POP-3 represented by the following structural formula (12), Red 613, Red 670, Cardoxyrohdamine (R6G), R-Phycoerythrin, Quantum Red, JOE, HEX, Ethidium homodimer, Lissamine rhodamine B peptide and the like may be preferably employed.

Brief Summary Text (38):

Even if each sensor has effective areas and noneffective areas alternately arranged in the main scanning direction, when such an optical element array and a pair of sensors are employed, the image-bearing light emitted from portions corresponding to noneffective areas of one of the sensors can be detected by the effective areas of the other sensor, whereby the image-bearing light entering the erecting unit optical system can be uniformly detected over the entire width of the image-bearing medium, and at the same time, generation of artifact can be suppressed as compared with when only one set of stimulated emission detecting means is employed.

Brief Summary Text (42):

Further, when a stimuable phosphor sheet which is anisotropic and radiates the stimulated emission in a direction at a predetermined angle to the direction of thickness of the stimuable phosphor sheet is employed as the image-bearing medium and the stimulated emission detecting means (the image-bearing light detecting means) is arranged so that the stimulated emission